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OF THE
MEDICAL SCIENCES.

EDITED BY

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&c. &c. &c.

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TO READERS AND CORRESPONDENTS.

Communications have been received from Drs. Blackman, Pinkney, (U. S. N.,) Holmes, (U. S. A.,) Lopez, Baldwin, Theobold, Peebles, Fahnestock and Brodnax.

We have again to apologize to Dr. Blackman for the postponement of his interesting paper. It shall without fail appear in our next number.

The following works have been received:—

An Inquiry into the Physiological and Medicinal Properties of the Aconitum Napellus; to which is added observations on several other species of Aconitum. By Alexander Fleming, M. D., President of the Royal Medical Society of Edinburgh. London: John Churchill, 1845. (From the Author.)

Lectures on the Urine, and on the Pathology, Diagnosis, and Treatment of Urinary Diseases. By John Aldridge, M. D., Lecturer on Chemistry at the Medical School, Park St., &c. &c. &c. Dublin, 1846. (From the Author.)

Transactions of the Medical and Physical Society of Bombay. Vols. 1, 2, 3, 4, 5, 6 and 7. (From the Society.)

Elements of Physiology, including Physiological Anatomy, for the use of the Student. By Wm. B. Carpenter, M. D., F. R. S., &c. &c. With 180 illustrations. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

Manual of Diagnosis of the Diseases of the Heart; preceded by clinical researches for the study of these affections. By Doctor Felix Andry, ex-chef de clinique at the Hospital of La Charité. Translated from the French by Samuel Kneeland, Jr., M. D. Boston: Wm. D. Ticknor & Co., 1846. (From the Translator.)

An Introduction to Entomology; or Elements of the Natural History of Insects: comprising an account of noxious and useful Insects, of their metamorphoses, food, stratagems, habitations, societies, motions, noises, hybernation, instinct, &c. &c. With Plates. By Wm. Kirby, M. A., F. R. S. and L. S., &c. &c., and Wm. Spence, Esq., F. R. S. and L. S. From the Sixth London Edition. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

The Practice of Surgery. By James Miller, F. R. S. E., F. R. C., S. E., Prof. of Surgery in the University of Edinburgh, &c. &c. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

A Clinical Introduction to the Practice of Auscultation, and other modes of Physical Diagnosis; intended to simplify the study of the Diseases of the Lungs and Heart. By H. M. Hughes, M. D., F. R. C. P., Assistant Physician to Guy's Hospital. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

Fevers: their Diagnosis, Pathology, and Treatment. Prepared and edited, with large additions from the essays on fever in Tweedie's Library of Practical Medicine. By Meredith Clymer, M. D., Prof. Prin. and Pract. Med. in Franklin Med. College, &c. &c. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

The Influence of Tropical Climates on European Constitutions. By James Johnson, M. D., Physician to the late King, &c., and James Randal Martin, Esq., late Residuary Surgeon, &c. From the Sixth London Edition, with Notes by an American Physician. New York: Samuel S. & Wm. Wood, 1846. (From the Publishers.)

The Young Stethoscopist, or the Student's aid to Auscultation. By Henry J Bowditch, M. D. Boston, 1846. (From the Author.)

Medical Lexicon. A Dictionary of Medical Science, containing a concise account of the various subjects and terms; with the French and other synonymes; notices of climate and of celebrated mineral waters; formulæ for various officinal and empirical preparations, &c. By Robley Dunglison, M. D., Prof. Inst. of Med. in Jeff. Med. College. Sixth edition. Revised and greatly enlarged. Philadelphia: Lea & Blanchard, 1846. (From the Publishers.)

Select Medical Library. Five Dissertations on Fever. By. Geo. Fordyce, M. D., F. R. S., &c. Second American Edition, with an Introduction. Ed. Barrington & Geo. Haswell. Philadelphia, 1846. (From the Publishers.)

A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, &c. By James Copland, M. D., F. R. S., &c. Edited with additions. By Charles A. Lee, M. D. Pt. xiv. New York: Harper & Bro., 1846. (From the Publishers.)

Report of the Committee of the City Council, appointed to obtain the census of Boston, for the year 1845, embracing collateral facts and statistical researches, illustrating the history and condition of the population, and their means of progress and prosperity. By Lemuel Shattuck. Boston, 1846. (From the Author.)

State of the Accounts of the Pennsylvania Hospital, for the year ending fourth month 25th, 1846, as adjusted by the managers, and laid before the contributors at their annual meeting, Fifth month 4th, 1846.

Transactions of the Medical Society of the State of New York, Vol. vi., Part iii. (From the Society.)

Fifty-Ninth Annual Report of the Regents of the University of the State of New York. Albany, 1846. (From the Regents.)

Thirteenth Annual Report of the Trustees of the State Lunatic Asylum at Worcester, December, 1845. Boston, 1846. (From Dr. Woodward.)

Analysis of the Testimony on the Trial of Alvin Cornell for Murder, and of the subsequent proof which led to the commutation of his punishment. By T. R. Beck, M. D., and A. Brigham, M. D. (From the Authors.)

The Twenty-Second Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn. Hartford, 1846. (From Dr. J. S. Butler.)

Twenty-Ninth Annual Report on the state of the Asylum for the relief of persons deprived of their reason. To which is added an account of the Asylum. Philadelphia, 1846. (From Dr. Charles Evans.)

Eighteenth Annual Report of the President and Directors of the Western Asylum, to the Legislature of Virginia, with the Report of the Superintendent and Physician, for 1845. Staunton, 1846. (From Dr. F. T. Stribling.)

A Treatise on Phonology; comprising a perfect Alphabet of the English Language, a system of Vocal Gymnastics, exercises in Orthography, Reading and Declamation, &c. By Andrew Comstock, M. D., &c. No. 1. Philadelphia, 1846. (From the Author.)

A Defence of the Medical Profession of the United States; being a Valedictory Address to the Graduating Class at the Medical commencement of the University of New York, delivered March 11th, 1846. By Martyn Paine, A. M., M. D., Prof. Inst. of Med. and of Mat. Med., &c. &c. New York, 1846. (From the Author.)

Report of the Mount Hope Institution for the year 1845. By Wm. H. Stokes, M. D., Physician. Baltimore, 1846. (From the Author.)

Valedictory Address to the Class of Medical Graduates of the University of Pennsylvania on the 3d April, 1846. By Wm. Gibson, M. D., Prof. of Surgery. Published by request of the Class. Philadelphia, 1846. (From the Author.)

Catalogue of Medical Graduates in the University of Pennsylvania at the Commencement, held April 3d, 1846.

Catalogue of the Trustees, Officers and Students of Indiana Medical College, (Medical Department of Laporte University.) Session 1845–46. Chicago, 1846.

Proceedings at the Annual Convention of the Connecticut Medical Society, May, 1846, together with a list of members and the annual address. Hartford, 1846. (From Dr. Russel, Sec.)

Address to the Graduates of the Philadelphia College of Pharmacy, delivered April 15th, 1846. By Joseph Carson, M. D., Prof. Mat. Med. and Pharm. Published by request of the Board of Trustees. Philadelphia, 1846. (From the Author.)

Gazette Médicale de Paris, Sept., Oct., Nov., Dec., 1845. Jan., Feb., 1846. (In exchange.)

Revue Médicale Française et Etrangere, Journal des Progrès de la Médecine Hippocratique. Par J. B. Cayol, Prof. de Clin. Med., &c. Aug., Sept., Oct., Nov., Dec., 1845. Jan., 1846. (In exchange.)

Journal des Connaissances Médico-Chirurgicales. Publié par MM. J. Lebaudy, H. Gouraud, Martin-Lauzer. Sept., Oct., Nov., Dec., 1845. Jan., Feb., 1846. (In exchange.)

Journal des Connaissances Médicales Pratiques Revue de Pathologie et de Thérapeutique; Bulletin de Pharmacie. Sept., Oct., Nov., Dec., 1845. January, 1846. (In exchange.)

Journal de Médecine et de Chirurgie pratiques, à l'usage des Médecins praticiens. Par Lucas-Championnière, M. D. P., &c. Sept., Oct., Nov., Dec., 1845. Jan., Feb., 1846. (In exchange.)

Journal de Chirurgie. Par M. Malgaigne. Feb., March, April, 1846. (In exchange.)

Journal de Médecine. Par M. Trousseau. March, April, May, 1846. (In exchange.)

La Lancette Française, Gazette des Hôpitaux Civils et Militaire. Jan., Feb., 1846. (In exchange.)

Journal de Pharmacie et de Chimie. Sept., Oct., Nov., Dec., 1845. January, Feb., 1846. (In exchange.)

The Edinburgh Medical and Surgical Journal. April, 1846. (In exchange.)

The Medico-Chirurgical Review, and Journal of Practical Medicine. April, 1846. (In exchange)

The London Medical Gazette. March, 1846. (In exchange.)

The British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery. Edited by John Forbes, M. D., &c. &c. April, 1846. (In exchange.)

Monthly Journal of Medical Science. Edited by John Rose Cormack, M. D. Feb., March, April, May, 1846. (In exchange.)

The Northern Journal of Medicine. Edited by Wm. Seller, M. D. February, March, April, May, June, 1846. (In exchange.)

The Provincial Medical and Surgical Journal. Edited by R. J. N. Streeten, M. D. Feb., March, April, May, 1846. (In exchange.)

The Dublin Hospital Gazette. Nov., Dec., 1845. Jan., Feb., 1846. (In exchange.)

The Dublin Medical Press. March, April, 1846. (In exchange.)

The British American Journal of Medical and Physical Science. Edited by Dr. A. Hale and R. L. Macdonnell. Montreal, March, April, May, June, 1846. (In exchange.)

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by Jos. Carson, M. D., Prof. Mat. Med., &c. April, 1846. (In exchange.)

The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. April, 1846. (In exchange.)

The St. Louis Medical and Surgical Journal. Edited by Drs. Linton, M'Pheeters and Fourgeaud. March, April, May, 1846. (In exchange.)

The Western Journal of Medicine and Surgery. Edited by Drs. Drake, Yandell and Colscott. March, April, May, June, 1846. (In exchange.)

The Western Lancet. Edited by L. M. Lawson, M. D., &c. March, April, May, 1846. (In exchange.)

The Illinois Medical and Surgical Journal. Edited by Jas. V. Z. Blaney, M.D., &c. March, 1846. (In exchange.)

The Bulletin of Medical Science. Edited by John Bell, M. D., &c. &c. April, May, June, 1846 (In exchange.)

The Medical Examiner. Edited by R. M. Huston, M. D., &c. &c. April, May, and June, 1846. (In exchange.)

Southern Medical and Surgical Journal. Edited by P. F. Eve, M. D. and J. P. Garvin, M. D. April, May, 1846. (In exchange.)

The Buffalo Medical Journal. Edited by Austin Flint, M.D. April, May, June, 1846, (In exchange.)

The Southern Journal of Medicine and Pharmacy. Edited by Drs. J. L. Smith and S. D. Sinkler. May, 1846. (In exchange.)

The New Orleans Medical Journal. Edited by Drs. Fenner and Hester. July, 1845. (In exchange.)

The New Orleans Medical and Surgical Journal. Edited by Drs. Carpenter, Fenner, Harrison and Hester. Sept., 1845. May, 1846. (In exchange.)

The Pennsylvania Journal of Prison Discipline and Philanthropy. Published under the direction of the Philadelphia Society for alleviating the Miseries of Public Prisons. Instituted 1787. April, 1846. (In exchange.)

The American Journal of Science and Arts. Conducted by Prof. Silliman, B. Silliman, Jr., and Jas. D. Dana. May, 1846. (In exchange.)

The Missouri Medical and Surgical Journal. By Drs. M'Dowell and Barbour. March, April, 1846. (In exchange.)

Illinois and Indiana Medical and Surgical Journal. Edited by Drs. Blaney, Brainard, Herrick and Evans. April and May, 1846. (In exchange.)

The New York Journal of Medicine and the Collateral Sciences. Edited by Charles A. Lee, M. D. May, 1846. (In exchange.)

The American Journal and Library of Dental Science. Edited by Drs. Harris, Westcott and Maynard. June, 1846. (In exchange.)

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2. The Young Stethoscopist, or the Student's aid to Auscultation. By Henry J. Bowditch, M. D. 12mo. pp. 278. N. York: J. & H. G. Langley; Boston, William D. Ticknor & Co. 1846.

3. A Clinical Introduction to the Practice of Auscultation and other modes of Physical Diagnosis, intended to simplify the study of the Diseases of the Lungs and Heart. By H. M. Hughes, M. D., Fellow of the Royal College of Physicians, &c. 12mo. pp. 270. Philadelphia: Lea & Blanchard, 1846.

4. Manual of Diagnosis of Diseases of the Heart, preceded by Clinical Researches for the study of these affection. By Dr. Felix Andry, Ex-chef de clinique, at the Hospital of La Charité. Translated from the French by Samuel Kneeland, Jr., A. M., M. D. 12mo. pp. 168. Boston: W. D. Ticknor & Co. 1846, - - - - - - - - - - - - - 171

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Lectures on the Operations of Surgery, and on Diseases and Accidents requiring Operations. By Robert Liston, Esq., F. R. S. Senior Surgeon to the University College Hospital, and Professor of Surgery in the College. With numerous additions by Thomas D. Mutter, M. D., Professor of Surgery in Jefferson Medical College, Philadelphia; Fellow of the Royal Medical and Chirurgical Society of London; Foreign Honorary and Corresponding Member of the Provincial Medical Association of Great Britain; Corresponding Member of the National Institute at Washington; Fellow of the College of Physicians, Philadelphia; Member of the Academy of Natural Sciences, Philadelphia; Corresponding Member of the New York Medical Society; Honorary Member of the Medical Societies of Philadelphia, of Virginia, &c. &c. &c. Philadelphia. Lea & Blanchard, 1846. 8vo. pp. 565. - - 192

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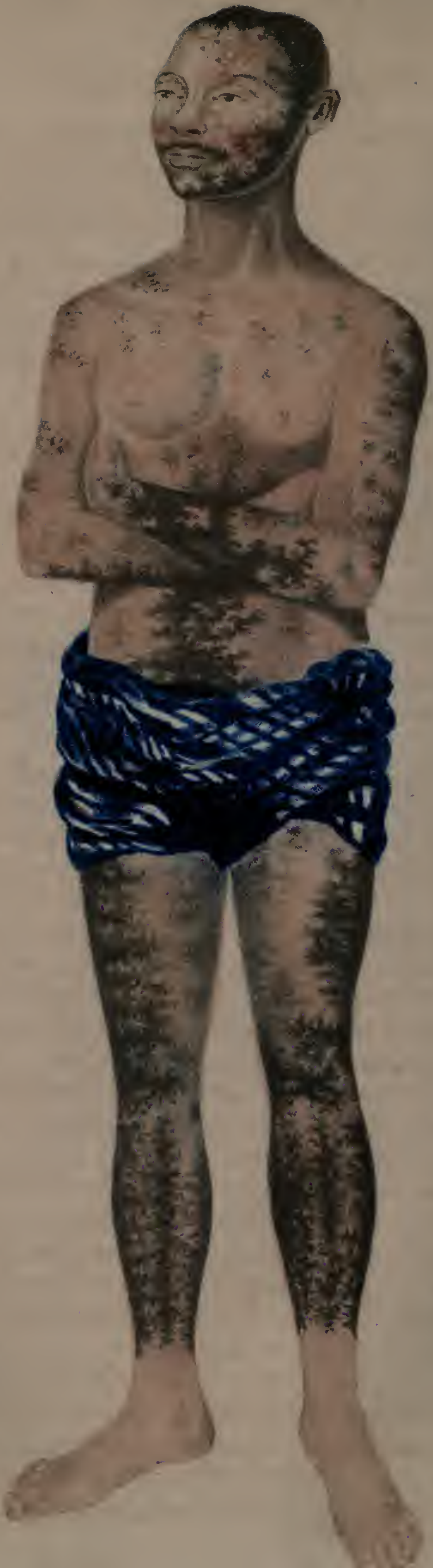

THE
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Art. I.—*An account of the Desquamation and change of Colour in a Negro of Upper Guinea, West Africa.* By Thos. S. Savage, M.D., Corr. Mem. Boston Nat. Hist. Soc.; the National Institute, at Washington, D.C.; the Entom. Soc. of London, &c. [With a coloured plate.]

The following sketch, it may be premised, is founded upon notes taken by the author at different times, in part, subsequently to the operation and changes described. The subject did not come under notice till the change of his natural colour had been accomplished. He was personally known, however, to other missionaries of the Prot. Epis. Ch., U. S. A., being a native of a settlement (Cavalla, about twelve miles east of Cape Palmas), where they have had a station in successful operation for years, under the charge of the Rev. Jno. Payne.

His name is Tah-too Duari. He is a member of the Grebo tribe, which inhabits, as the aborigines, Cape Palmas and the vicinity. His father and mother both were members of the same tribe and natives of the same region. The complexion of the former was decidedly black, that of the latter, "*yellow*," the two extremes observable in the tribe, and between which there is found almost any variety of shade. Tah-too's natural complexion was black, not presenting quite so deep a hue as his father's, being a shade or two lighter, perhaps, than the blackest.

He is about twenty-five years of age; rather under the average height of his tribe, measuring five feet and four and a-half inches, his proportions are good; muscles well developed, and he has always appeared, it is said, to be in fine health.

In the beginning of March, 1844, he was at work a few miles to the interior of Cavalla, (which is directly on the sea-board,) clearing up a tract of land preparatory to their customary annual planting of rice. The immediate site of his farm was somewhat elevated, but had on two sides a wide-spread marsh. On a certain day considerable rain fell, which was succeeded by a clear, hot sun. In the evening, soon after retiring from his work, he was suddenly attacked with an acute, deep-seated pain in the head, back of the forehead and eyes, accompanied with vertigo. This was soon followed by a strong ague, and a distressing spasmodic action of the muscles of the throat and chest, attended by a suspension of the functions of the mucous membrane lining the laryngeal and pharyngeal passages. The sensation in the latter case, as described, was that of extreme dryness in the fauces, and of a bone lodged in the throat, depriving him of the power of free deglutition, and respiration. He called for water under the idea that by thus forcing a passage, he would overcome the obstruction; little or no relief, however, followed. The pain in his eyes was aggravated during the night to an agonizing degree; the lids convulsively closed, not leaving the power of re-opening them. This was accompanied or succeeded by a flow of tears so profuse, that the attendants thought the *balls must have bursted*. These symptoms continued for a week with more or less severity, except the ague, the paroxysms of which were of daily recurrence. The intensity of the symptoms generally, during the period, varied with the temperature of the surrounding air. The heat of a fire and of the direct rays of the sun was intolerable, and, whenever so exposed, he would be instantly driven to seek a cooler position.

During the first night of the attack, an extremely annoying and painful sensation was experienced immediately under the skin, represented by him like the pricking of needles, and followed by an intense itching. The numerous papillæ of the skin then enlarged and gave to it a feeling, to use his own words, like that of a "*picked fowl.*" This eruption appeared first on his neck, and thence rapidly spread over his body. This symptom continued also through the week, varying in degree with the aërial temperature.

By the eighth day there was a subsidence of the symptoms generally, when the process of desquamation began. This continued three days—during which time the cuticle came off freely, in pieces of half an inch in diameter, down to a very minute furfuraceous exfoliation, and could be easily removed by the hand or other means.

His body now had lost its identity, and, instead of the complexion of a negro, presented a dingy yellow, like that of the sole of the foot after having been exposed to the action of salt water.

The whole operation from beginning to end, was unattended with any perceptible excretion of oily, purulent or serous matter, except from the eyes; thence a discharge was had, first, of tears, as has been remarked, then, of a purulent fluid, and, he thinks, with the removal of the membrane from the sclerotica. Without commenting upon the probability or improbability of the latter statement, I would here remark, that the *dull yellowish white* so characteristic of the eye of the negro, is wanting, and the clearer white or bluish tinge of the white man's is present.

In about a month after the operation now described, the same prevenient symptoms occurred, though less in degree, when a second process of desquamation began. The cuticle now thrown off was thinner than the first, and the colour resulting that which he now presents. This cannot be said to be *really white*, except on the back of the hands, on the wrists, feet, and ankles. The skin on the hands is free from that coarseness and corrugated appearance peculiar to the race, and is as delicate and soft as my own, showing through the new cuticular medium the blue veins beneath. On the lower part of the back, on the abdomen, front of the thighs, and calves of the legs, there is a dark hue, much increased, however, by the thick black hair on those parts, which appears to be but little, if at all changed. On most other parts of the body there is a dull white; in some places a decided white, with considerable delicacy and softness of skin. His aspect is not that of a mulatto, but,—with the exception of his decidedly marked negro features, and the crispness of his hair,—that of a white man. Were it not for these points of exception, he would be taken for a legitimate member of the Caucasian family in any part of the world. But his unchanged and unchangeable outline, stamps him indelibly as the descendant of Ham.

He is extremely sensible to the heat of fire and the sun, and cannot come within that of either directly without great discomfort. His face and feet are inflamed, and the latter much swollen from the influence of the sun. The soles of his feet and palms of his hands are very tender, making it painful for him to walk, or handle rough objects. His toe and finger nails have begun to show the mysterious influence at work in his system. The process of detachment is regularly though slowly going on; a distinct line of demarkation is visible between the new and old nails; the former having advanced about one-third the distance. The posterior portion of the latter presents a flaking appearance, showing most clearly its laminated structure. The new portion, in its flatness, clearness, and delicacy, exhibits a striking contrast to the old, which is convex, dull in aspect and thick.

The hair, as already observed, is not much changed. The border only of the scalp covered with hair came off;—the superior portion, cuticle and hair, remains unchanged.

It is a custom with many of the young men of this tribe to engage as boatmen on board of vessels while on the coast. Such as are designed by their parents for this service, are marked, while young, in the face, and pass under the well-known name of *kroomen;* an appellation not now, as formerly, confined to a particular tribe. This *kroo mark* usually consists of a broad blue stripe running from the hair on the scalp, down the forehead to the end of the nose; and an arrow-head of the same colour at the outer angle of each eye, running backwards. These marks are made by deep incisions extending to the cutis, and applying to the fresh wound the soot of an indigenous gum burnt under an earthen pot or brass kettle. Its shade depends upon the hue of the subject, being a very dark blue in the jet negro, and the opposite in one of lighter complexion. Tah-too is strongly marked thus; with his changed skin, it presents nearly the shade of sulphate of copper, but in the process of cutaneous detachment, part of it has been cast off, and it is now devoid of that regularity of outline which it originally had, having various interruptions in the edges and centre.

My inquiries have been particular respecting his health previous and subsequent to this change, but nothing has been elicited proving it other than perfectly good. He admits, however, that when first attacked, his taste was vitiated, giving an unpleasant bitterness to everything he ate; from which fact it may be inferred, that some derangement of the biliary system previously existed.

He is highly pleased with his change of complexion; attaches great importance to it from the notice it gains, and, from the suggestion of some other person, is building largely upon it, hopes of pecuniary profit. When placed under my observation by his father, it was *enjoined upon me to prevent, if possible, his return to a negro.*

The observations immediately following, are from notes without date, though made a few weeks after the above.

The hair upon the surface of the body generally, has become white; especially, that in the eyebrows and eyelashes; white hairs are also numerous on the scalp. His head has been shaved, since which, the change in colour of the hair is very perceptible. There seems to be but little, if any, difference in its length and crispness. He is very positive in his statement that the old hair falls off, and the white comes up anew.

There has been no change in his complexion except a palpable redness or inflammation produced by exposure to the sun. His feet are quite sore from this cause, the cuticle of which cracks and pulls off freely. At the time of my first examination, I clothed him with a toga, in imitation of the mandingo dress, which has protected his body to a great degree against the influence of the sun, and rendered his exposure more comfortable to himself.

A cutaneous affection in the initial stage is perceptible, no marks of which were visible at the preceding examination. He assures me that no trace of it then existed. It seems to be a lichen and is spreading to other parts of the body.

March 15*th.* Three months have now elapsed since my last examination; during all this time he has been clothed to protect him against the unfavourable influence of the sun and atmosphere. Numerous spots of a chestnut brown colour exist on various parts of his body, in diameter from one-sixteenth to one-eighth of an inch. They are unattended with any cuticular elevation, and increasing more in number than in size, run into patches in several places, which are a shade or two darker than the recent spots. They appeared first upon the wrist, where they have become so numerous as to reach in patches upwards, to a distance of six inches or more. Their appearance was then on the back of the arm, head and neck successively. A continuous narrow line of *black* extends from the hair on each temple down to the cheek, which in contrast with the adjacent white skin, presents the aspect of whiskers. Spots and patches of a dark brown appear also on the back. The hands, with the exception of a few spots on their back, are as white as mine. The front of his thighs, his calves and shins, are thickly spotted, and the complexion of the skin generally seems to be a shade or two darker, not the tanning effect of the sun, as we frequently see it upon the white man's skin, but evidently deeper seated. He says that bathing in the sea will so far macerate his skin that he can rub off the cuticle and restore the whiteness.

July 1*st.* Having heard that Tah-too was rapidly turning black, I sent, requesting him to visit me. He arrived to-day, but I am much disappointed in the extent of his colour; the process of changing is much slower than I could have anticipated. The general shade of his skin is somewhat darker; and in many places where were spots only, patches now appear. The patches that existed at my last examination, have considerably increased in size, and are now of a decided black, even more so, it is said by him and others, than was his natural complexion. Spots are now seen scattered over the whole surface, varying in shade, from a light brown to a black, according to their age. In all cases the colour is dull, wholly devoid of that oily and shining appearance usual in all healthy and cleanly negroes. The calves of the legs, the thighs, the abdomen, back of the arms and neck, sides of the forehead, and upper lip, are black, though presenting in various places irregular patches of white.

The "*kroo-mark*" is now better defined, from the fact, I suppose, that the irregularities are not so visible through the darkened skin. It is of a paler hue; that upon his left breast is quite distinct.

With the colour of the skin, that of the hair is restored, though every black patch presents a mixture of black and white. The hair upon the lighter parts is still white. He says the white hairs fall off and the black ones appear as the change in the cuticle advances.

The cutaneous affection before noticed, has greatly extended, giving to the surface of the superior portion of the body the appearance of a general inflammation. This, again, with the spots and patches of returning colour scattered over the surface, gives to the man a hideous aspect;—that of a generally diseased skin, covered with scabs. This, however, is not so; and what is remarkable, there is a disappearance of the eruption with a return of colour. The white parts only seem to be obnoxious to the disease.

His health during the interim of my examinations has been remarkably good. No other affection, local or general, than the eruption already noticed, has arisen. Indeed, he would not know that he was undergoing the change, were it not that it comes within the vision of himself and others.

The Plate represents the subject as he appeared at this date.

October 4th. Tah-too has just arrived again for examination: about two-thirds of his upper and lower extremities are uniformly *black;* the remaining portion is spotted, except the hands and feet, which, though they have been constantly exposed, have undergone little or no change,—a few small spots only appear upon them. To about the same extent the body has become black—the other parts being spotted; the general complexion of the latter, however, is darker. The face is but little changed from what it was at the last dates, and as exhibited in the sketch. It is remarkable that those parts which have been most exposed have undergone the least change. He has been constantly and well clothed, except his feet and head, and these, as remarked above, with the hands, present about the same appearance as exhibited in the drawing.

The change is still, though very slowly, going on, and in the same manner as represented in my notes at the earliest dates, viz., first in minute spots of a circular form, which increase in number, till, uniting, they form patches with irregular edges, which, again, in their turn increase, till a great portion of a limb or the body becomes continuously black. This is his present appearance after the lapse of more than eighteen months. This change has proceeded only about two-thirds of the required extent. During the process to the present time, he has been remarkably free from sickness, always representing himself in perfect health, and appearing in fine spirits.

Art. II.—*Observations on the Treatment of Remittent Fever as it occurs in the southern parts of Alabama.* By Wm. M. Boling, M. D., of Montgomery.

In the preceding number of this Journal we gave a description of remittent fever as it occurs in the southern parts of Alabama, and we shall now offer some observations on its treatment, and give the result of our experience in its management.

In the *treatment* of remittent fever there are but few remedies necessary or proper; but to insure success, promptness in their administration, and a well-timed application, are all important; and none should be used but such as are intended to, and capable of fulfilling some important indication. None can be administered, as in many other diseases, with a mere negative effect. The stomach suffers greatly, and its powers must be husbanded; and there can be no remedy administered, which, if it fails to exert a favourable influence over the disease, does not produce a more or less injurious effect on this organ.

I will enumerate the most useful remedies, and the circumstances under which they are indicated, not so much perhaps in the order of their importance, as in the probable order of their administration.

Blood-letting can hardly be considered a remedy of safe and general application, at least, not so much so as some of its advocates assert; while with proper discrimination its use is frequently beneficial, and at times circumstances occur which imperiously demand it. One-half of the cases probably, are better treated without it,—and when the indications for its use are not decided; where the circumstances are such as to create or admit of doubts—the safer course, at least with the inexperienced, as a general rule, will be *not to bleed.* There is such a tendency, in diseases of malarious origin, to sudden, unaccountable and unexpected prostration, or oppression of the vital powers, arising from, or connected in some way with determination to the internal organs, and this condition I have so often known to follow the loss of a quantity of blood altogether inadequate to the production of faintness in non-malarious regions, that it is now only where there is some strong indication for its use, something more than the mere presence of fever, a flushed face, thirst, a moderately full and firm pulse, &c., that I venture to resort to it. In young, robust, and plethoric subjects, who have previously been in good health, where the febrile excitement runs high, and the pulse is full and very firm, we may generally resort to it without danger, and even beneficially, for preserving the integrity of the important organs, from the influence of a too forcible action of the heart. Where there is a determination to the brain, as in comatose remittent, the pulse here being more full and firm than under most other circumstances, it may be resorted to with little apprehension of danger. In that form of comatose remittent, however, in which there are present a quick small pulse, a shrunken state of the surface, and a tendency to coolness of the extremities, its effects are much less decidedly beneficial. Here, without certain precautions, to be hereafter mentioned, the existing bad symptoms are generally aggravated by it; while with these precautions, blood-letting is almost the principal reliance. When I say the principal reliance, however, I allude to such cases only as are in danger of terminating fatally during the existing exacerbation, or of having lesions established, incompatible with a return of the organs to a healthy state. Delirium, when it occurs in connection with a full and firm pulse, in a young and robust subject, in the earlier exacerbations, may generally be moderated or relieved by blood-letting. Later in the disease, and where the pulse is not full and firm, the loss of blood, to be at all beneficial, must be effected by cupping. In cases where the first or second exacerbation has been neglected or mismanaged, there is at times, at the period of the next exacerbation a state of imperfect reaction. What may be considered the cold stage of the exacerbation continues long. There are present a slight coolness of the extremities; oppressed and difficult respiration; a great feeling of weight about the epigastrium and lower part of the chest; heat of the abdomen and chest; an expression of alarm in the countenance; most distressing efforts to vomit; deadly nausea; and a small, corded and not very frequent pulse, generally not over 120 in the minute. Under such circumstances the lancet may be used with advantage.

I have spoken of the great tendency to sudden collapse, or oppression of the vital powers, in some way connected with those determinations to the internal organs, which so often follow the use of the lancet in malarious fevers. In the situation above described, this tendency is strong, but may be prevented by the following precautions, which are equally applicable to the comatose remittent last spoken of, and to all other cases where this circumstance is to be feared. Before opening a vein, artificial heat should be applied to the extremities—sinapisms to the calves of the legs and wrists; and one large one covering the chest and abdomen, and another the spine. In case of the existence of coma, the feet and legs may be drawn over the foot of the bed and immersed in a deep pail of warm water, in which a considerable quantity of mustard has been infused. They should be permitted to remain in it at least half an hour before the operation, and for a considerable time after it; a full dose of opium given half an hour or three-quarters before the operation, seems to prepare the system for the loss of blood, and, the oppression somewhat relieved by this evacuation, brings about a favourable reaction, soon followed by a free and general perspiration, terminating in a more perfect remission than would otherwise have occurred. Neither of the remedies separately would have accomplished this so effectually.

Contrary to the instructions of most authors who have advised blood-letting in febrile and inflammatory diseases, in those of malarious origin it is important that it should be drawn in a small stream, and with the patient in the recumbent posture. The object is to procure as much blood, with as little shock to the system as possible. Anything like syncope must be avoided, as having a tendency to terminate in that state of collapse above alluded to. To remove oppression, not to reduce the force of the pulse is the aim, and the best evidence that the remedy is exerting a favourable influence, is an increase in its fullness, without any increase in its frequency. Where this latter occurs, the orifice must be immediately closed, and an interval allowed for it to pass away. In this manner the orifice may have to be closed and reopened two or three times in the course of an hour or two, before the object will be attained. The favourable influence of the remedy is manifested by a relief of the oppression about the epigastrium and chest; a more equable temperature of the surface; less difficulty in respiration, together with the increased fullness of the pulse already mentioned. To be decidedly beneficial in the second form of comatose remittent fever, a considerable quantity of blood must in this manner—as it were—be *coaxed* away. From fifteen to twenty, or thirty ounces should be withdrawn in the course of an hour or two. Even in the first-mentioned form of comatose remittent, in which the pulse is fuller and more firm, the sudden abstraction of a large quantity of blood, for the purpose of making a very decided impression on the pulse, seems to be attended with no benefit, as the coma is not relieved by it, nor does it at all abate till the arrival of the period of the remission; while, setting aside the danger of collapse—less, however, to be dreaded here than in any other variety of remittent—a degree of excitement and reaction proportionate to the degree of depression produced in the pulse, is likely to follow. By abstracting a moderate quantity of blood gradually, thus restraining the force of the heart's action, without producing an approach to syncope, we may in most cases secure the brain against mischief during the existing paroxysm, without incurring the risk of fatal or dangerous collapse, or the disorganizing reaction so apt to follow a more moderate degree of depression. Sixteen or eighteen ounces may be considered a medium quantity to be taken at once from a robust and previously healthy young man, and will rarely have to be repeated. This remark, however, relative to the quantity of blood and a repetition of the bleeding, has reference only to its connection with, and as forming a part of, the treatment to be detailed. In the hands of those who use the lancet as a main dependence, as the principal remedy, I have no doubt that venesection will have to be carried to a greater extent than I have inculcated. In an earlier period of my practice, I used it much more fully than at present. I have partially abandoned it, not from a conviction of its inutility, but from the fact, that a more extended experience has enabled me to supersede it with a much less dangerous remedy. Were I deprived of this, the lancet would again become with me a more important agent than at present, and I would expect to do much good with it, and, perhaps, occasionally mischief, until I became better capable of discriminating the exact circumstances under which it was indicated.

There is scarcely an author, who, in speaking of blood-letting, in directing the mode, does not lay great stress on the necessity of drawing blood in a *full* stream, and in the erect or semi-erect posture. Upon "pleno rivo" and "ad deliquium animi" are the changes ever rung; and yet how precisely are all those directions contrary to what in actual practice is found to be correct, at least so far as an inference can be drawn from the results of practice in the south. Who ever saw a patient bled to fainting here, who either did not fall into collapse, or whose pulse after reaction, did not immediately become much increased in frequency, and smaller, and so continue till brought under control by the favourable action of other remedies? "But the trifling manner in which it is too often performed, when it is ventured on at all, does more harm than good. Bleed boldly and decisively till the head and præcordia are relieved, or draw no blood whatever." Such is the emphatic language of Dr. James Johnson. If "bold and decisive" bleedings *were* successful, generally, in *relieving the head and præcordia*, no one could cavil at the advice; but, unfortunately, too many for whom this relief has been attempted by such means, have found it only in death; while by an opposite method of bleeding, by bleeding, not *boldly* and *decisively*, but cautiously and carefully, and from a *small* orifice, never carrying it so far as to diminish the *volume* of the pulse, relief may not unfrequently be differently procured. Of course, I do not pretend to say that the *bold* use of the lancet was improper in the hands of those who seem to have found it so beneficial, but simply, that though the character of the disease appears much the same here, as that described by Dr. Johnson and others—advocates of this bold practice—it will not do here.

Local blood-letting is perhaps less practised than it should be; the indications for its use being certainly very decided, according to the current doctrines of the books,—as local determinations are numerous, and apparently the cause, or at least in some way connected with the fatal termination in many cases. The favourable influence of several remedies in use, over the progress of the disease in question, excepting, of course, those cases which occasionally occur, in which death takes place so rapidly that no opportunity is allowed for the action of remedies, is so immediate, so palpable and decided, that the physician soon becomes disgusted with, or doubtful of the efficacy of, any at all tedious or equivocal in its action. Such is certainly the case with local bleeding. It is seldom that any decided or immediate beneficial effect follows its use, though, in all probability, it has a favourable influence over the general progress of the disease. For the relief of coma, delirium, and epigastric tenderness and oppression, I have used it much, but seldom with the effect of producing any marked and immediate benefit. Notwithstanding this, in cases where coma or delirium is present, I use it; for it is hard to get rid of preconceived opinions, especially where no injury follows their practical application; and such is the case here; for, if not relied on to the neglect or exclusion of other remedies, certainly no injury will follow the use of cups to the epigastrium, or to the head or neck, when determinations to these parts take place, unless carried to an unusual extent.

Although the positive curative agency of *Opium* in itself is but moderate, yet it may be used so as to add much to the comfort of the patient and is very important for the preservation of the stomach in a condition to retain other remedies,—while, even where inflammatory complications exist, it is but rarely productive of that mischief which Theorists have laid to its charge in such cases. A full dose of morphine, say from a third to half a grain, besides allaying the irritability of the stomach, during the time the system remains under its influence,—if given about, or just before the commencement of the decline of the exacerbation, generally has the effect of producing free perspiration, and a more perfect remission. In that form of the pernicious remittent, denominated *congestive*, it is perhaps more useful than in any other. In none is it more required on account of irritability of the stomach, while the bowels, in a large majority of cases, require its restraining influence. In combination with quinine, it sustains the force and volume of the pulse, and the system against the *depressing* effect of the latter remedy, during the time of its use, in breaking up the *periodicity* of the disease. The solid opium is here preferable to the morphine. To enable the stomach to retain other remedies, the patient has frequently to be kept constantly under its influence until the disease is controlled, and where this is neglected, all other internal remedies have at times to be suspended, until it is again brought about. For this purpose a quarter of a grain of morphine every third or fourth hour, will, at least be necessary. In congestive fever, as a stimulant, opium I have said, is preferable to morphine; but, where the object is to arrest vomiting alone, the latter is the most suitable article.

To obtain its full benefit, some tact is requisite in its administration, and I have known it continued in repeated doses some time without any favourable effect, merely because each portion happened to be given a few minutes too soon, or too late. In cases strongly demanding its use on account of irritability of the stomach, there is, perhaps, rarely an interval of more than half an hour or three-quarters between the spells of vomiting. Here a full dose of sulphate of morphine in solution, in a teaspoonful of water, given *immediately* after the patient has vomited; will probably arrest the vomiting for the time; or, should this be rejected, it will at least have produced sufficient influence to insure the retention of a second, if administered immediately after its rejection. After this, the other remedies may be resumed, but the morphine should be repeated every third or fourth hour. The morphine is much less offensive to the smell and taste than laudanum, and in solution much more prompt in its action than solid opium.

In the *insidious* remittent spoken of as occurring more frequently in children, with severe convulsions, from the intestinal canal being loaded with indigestible matters, and the irritant action of these being also frequently augmented by purgatives prescribed before the arrival of the physician, the almost only hope for the time is in opium. The convulsions can only be controlled by arresting the motions of the intestines, and allaying or counteracting the irritation produced by their contents. Every rolling motion of the intestines is followed by a convulsion—and every convulsion is probably attended by an evacuation. Quiet the intestines for the time being, if possible; guard against a second exacerbation; and during the remission, have the patient better prepared for it, should it come, by having the intestines evacuated at this time. Where the convulsions or stupor prevents the patient from swallowing, the opiate may be given in an enema. Under some circumstances, a patient who would be benefited by purging during the remission, would be killed by it in the exacerbation. It must have been from seeing the effect produced by purgatives during the exacerbations, more especially, that caused Lempriere (*Diseases of Jamaica*) to observe, that by the use of active purgatives, "a train of distressing nervous affections will be induced, that shall, in many instances, place the patient in the greatest danger."

As regards purgatives—they are highly beneficial in the commencement of an attack of simple remittent fever, used to an extent sufficient merely for the discharge of the fecal matters contained in the intestinal canal. After the operation of a moderately brisk purgative at first for this purpose, a very slight action should be kept up, where there is a tendency to constipation of the bowels, merely for the purpose of carrying off the secretions, not to excite them; at least *not actively to excite secretion from the intestinal mucous membrane.* In some cases, however, the bowels having been once freely evacuated, purgatives will be no farther needed, as one or two evacuations in the twenty-four hours will take place spontaneously; and this is amply sufficient. In this partial exclusion of purgatives, however, in the further treatment of the disease, the moderate use of calomel, given, as will be explained hereafter, not with special reference to its action as a purgative, is not considered. Used to the extent above specified, it must be admitted that purgatives are beneficial; yet carried much beyond this, they rarely fail to do mischief.

Although I do not pretend to say that gastro-enteritis is the cause of the disease, or rather that the fever is a mere gastro-enteritis, it is nevertheless present in all, or nearly all; and in a large proportion of cases, is the cause of many of the most prominent and distressing symptoms. The disposition to inflammation of the intestinal canal, where it perhaps may not at first exist, and the slight causes necessary to increase it to a dangerous extent, where it may have been at first but slight, render the utmost caution necessary in the administration of purgatives. It is an erroneous impression among physicians who have not practised in the south, that more powerful and active purgatives are requisite here; and one productive of much mischief, as causing the northern practitioner settling in the south to double the size of his purgative dose, when its reduction one-half would probably be efficient, and certainly more safe. On the contrary, the bowels are extremely susceptible to the action of purgatives, which, without great caution, are apt to produce much irritation and hypercatharsis.

In combination with the first dose of opium or morphine, ten or fifteen grains of calomel may be given, not with the expectation of any immediate action, as the opium will probably prevent this. It may be supposed, however, to pass slowly through the superior portion of the intestinal canal before the effect of the opium has subsided, and by the commencement of the decline of the exacerbation, at which time the irritability of the stomach will have abated a little, a small dose of some other purgative may be given to quicken its action. For this purpose I have been in the habit of using castor oil, Epsom salts, or compound extract of colocynth, combined with blue mass; say to an adult, from ten to twelve grains of the former with about five of the latter, made into four or five pills. With white patients there is such a repugnance to the castor oil, that few are willing to take it, and but few can retain it after doing so. On the contrary, with negroes, in whom, as has been before observed, there is much less irritability of the stomach—it is willingly swallowed and more readily retained. Many prefer medicine in the form of pill, and for such I have found no better combination than the compound extract of colocynth with blue mass. I prefer, however, the Epsom salts—where there is no settled repugnance to it—to either of the other articles. In the lectures of Professor Revere, while a student of medicine, I first heard the use of this article strongly advocated as a purgative in remittent fever. Its advantages, if my memory is not at fault, as enumerated by him, were, the certainty but mildness of its operation: while, by dissolving it in a small quantity of water, and withholding other drinks for some time before its administration, it was generally taken willingly, sometimes greedily, for the purpose of quenching the excessive thirst. In my earlier attempts with this article, I was exceedingly disappointed, as its action was often excessive, producing frequent and copious watery discharges, debility, and excessive irritation of the intestinal canal. For a while, I abandoned it altogether, but observing the same tendency in other purgatives, to produce hypercatharsis when prescribed in their recognized doses, I resumed its use again, and by diminishing the dose in proportion to the increased susceptibility of the intestinal canal, found it fully to answer my expectations, and to accomplish the desired object better than anything else. The dose is from a drachm and a half to two drachms. Where, however, the irritability of the stomach is very great, and continues after the commencement of the decline of the exacerbation, so as to render it probable that no purgative could be retained, as is frequently the case, to aid the action of the calomel, enemata may be administered with benefit. For this purpose I think I have observed a better effect from a weak solution of muriate of soda, than from anything else. It is very prompt in evacuating the lower part of the intestinal canal, and quickly extends its influence along the alimentary tract, causing a propulsion of its contents from the stomach and upper portion of the small intestines to the rectum. The evacuating and revulsive action, however, of many other substances used as enemata, is equally as prompt and decided, as of this, and yet, it seems to possess one advantage, for which I can offer no explanation, over everything else that I have used for the purpose,—that is, of assisting very materially, and in a more palpable manner, in allaying the irritability of the stomach. If I am not mistaken, Dr. Dewees has recommended it for this purpose, in some of the acute febrile affections of children attended with vomiting. During the whole progress of the case, where it is necessary to interfere for the purpose of procuring evacuations, an occasional saline enema answers the purpose well, without the additional irritation of the stomach produced by purgatives administered by the mouth.

In the insidious remittent, which I have spoken of in children, attended so often with convulsions, from a loaded state of the bowels with undigested matters, purgatives, though extremely dangerous and injurious during the exacerbation, are nevertheless of much value during the remission, nor should a free evacuation of the bowels ever be neglected at this time, as without this precaution, should another evacuation occur, the convulsions come with it, and almost invariably prove fatal. Sometimes, however, the remission is so imperfect, that a very slight abatement only takes place in the convulsions, without any lengthened interval between them. In this case, purgatives must be avoided even during the remission, until the febrile excitement, and the convulsions are subdued, or very decidedly mitigated. On the contrary, in what may be called simple remittent in children, at least a much less dangerous and violent form of disease, but attended with convulsions, in which this distension of the bowels with undigested food does not exist—the evacuations being bilious and fecal, the convulsions too, not being attended with the rumbling noise in the bowels—the action of mild purgative, even during the exacerbation, does not augment the convulsions, and seldom fails to be followed by immediate relief. The explanation, perhaps, in part, consists in this—that the natural feces being les irritating to the bowels than lumps of undigested food—which here may b looked upon as foreign matters,—their movement along the sensitive mucou membrane, produced by the purgative, would consequently be less injurious As a purgative in either case, a few grains of calomel followed by repeate mild, but copious enemata, will be proper.

In the first described variety of comatose remittent, a rather more fre use of purgatives may be admitted, than in any other form of remitten fever, while in the one succeeding, in which the symptoms indicate tha the abdominal viscera share with the brain the onus of the disease, the should be entirely prohibited. As in the last, so in that form of perniciou fever, known among us as congestive fever, purgatives are extremel mischievous, and should be entirely avoided until the febrile excitement an irritation, or inflammation, or congestion, or whatever it may be denominated pathologically, of the intestinal canal, are subdued by other remedies that is, until the disease is almost entirely removed; when a cathartic ma be used with safety and advantage. Something like the same rule obtains here as in the insidious remittents spoken of above. Senac undoubtedly had this modification in view when he says—"when the stomach and intestines receive the whole force of the disease, the practitioner must decline the use of purgatives," and "It would be no less improper to administer purgatives in cases where there is prostration of the vital principle, or where, during the cold fit, the heat has retreated from the surface and extremities to the internal parts of the body." The same excellent author has also observed, in directing the administration of a cathartic, "lenient, I say, and such as may but gently excite the peristaltic motions of the intestines; for if an active and highly stimulant purgative be given, such commotion may be excited as will greatly augment the febrile heat;" and what practitioner in the south capable of distinguishing between the natural progress of disease, and the poisonous effects of medicines, has not frequently witnessed the same. The young practitioner, on witnessing the beneficial effect of the evacuation of the fecal matters, as formerly suggested, is strongly tempted to carry the purgative action further, but mischief never fails to follow. The purgative is merely beneficial, because its temporary irritation is less injurious than the permanent irritation kept up by the retention of fecal matters. All other remedies that it may be necessary to prescribe, of course, I mean in those cases in which purgatives are admissible, seem to act much more favourably, after the evacuation of the intestines. But is it not so in all other diseases? Is there any remedy for any disease, no matter how general its application may be in that disease, that does not frequently require a modification of the system, a course preparatory for its administration, by other remedies, to admit of its peculiar effect being readily and favourably produced?

Counter-irritants.—Among the simple and less important remedies, there is nothing gives such immediate and decided relief to any of the distressing symptoms, as the application of a large sinapism to the abdomen and chest gives to the nausea and vomiting, the feeling of distress and anxiety about the præcordia, and the sighing and oppressed respiration. Threefold the relief to the above symptoms will be produced in the application for five minutes, of a sinapism, to that obtained by an hour's cupping. The sinapism may be repeated again and again, as the effect of one application subsides. Once or twice, however, during the height of each exacerbation, will generally be sufficient. Where the retching and vomiting, and the difficulty of retaining medicine are extreme, it may be advisable to apply one for a few minutes before the administration of each dose. In some cases I have thought that the efficacy of the remedy was enhanced by mixing with the mustard a few drops of the oil of peppermint. In domestic practice, for this purpose, much reliance is placed in poultices made by stewing peppermint in brandy.

In obstinate and rather protracted cases, after the repeated application of the sinapism, it seems to lose its influence over the above symptoms; the pathological condition producing them, seemingly, having become too deeply rooted for its action. Under such circumstances, a blister will seem to exert a controlling influence, though in the earlier periods of the disease, the benefit derived from one appears no greater than that from the sinapism. In the comatose cases, sinapisms to the extremities are frequently beneficial, and the same may be said of their application to the spine and abdomen in the cases attended with convulsions in children. In the second described variety of comatose remittent, a blister, covering nearly the whole head and extending down the back of the neck, may be useful, where the patient is not *in extremis* before it has time to draw. It is, however, in *congestive fever* that counter-irritants are most in requisition. Sinapisms to the spine and abdomen, and to the extremities, shifted about frequently from place to place, frictions with dry mustard, and the application of artificial heat, by bottles filled with hot water, should be sedulously applied. But oh, how difficult a thing it is to warm one of those clammy hands! The beneficial effect of blisters is less marked than that of agents more prompt in their operation. Sometimes Granville's lotion has appeared useful. Nothing, however, of the kind has appeared of so much service as *continued friction with dry mustard.*

Everything relative to the use of counter-irritants in the different forms of pernicious fever, is equally applicable to the advanced stages of protracted cases of the less malignant forms, where they will frequently be found indicated by the same symptoms, but less rapid in their progress.

Stimulants.—There are very few circumstances under which this class of remedies is beneficial in remittent fever. The use of opium, as already adverted to in congestive fever, in combination with quinine, to prevent or counteract the sedative action of the latter, while it is brought to bear against the *periodicity* of the disease, is almost the only circumstance under which I have seen any decided benefit from them. Occasionally, perhaps, a weak infusion of capsicum, with a small quantity of the aromatic spirit of ammonia, where there is extreme depression, may be administered in aid of the opium. Generally, however, the stomach is too irritable for this, and even where it is moderately retentive, nothing but the most absolute necessity should tempt to the administration of anything which either from its bulk or peculiar properties, may be at all calculated to nauseate. In those cases where "congestion" or sudden prostration has been produced by the lancet, stimulants are much more likely to be beneficial than in those where the same condition comes on in the beginning of the disease spontaneously, or is the effect of drastic purgatives.

In accordance with a custom universally prevalent, I believe, in the advanced stages of protracted cases, verging to a fatal termination, with a weak fluttering pulse, great debility, &c., I have been in the habit of resorting to the use of stimulants, but rarely with any good effect. When that stage of the disease arrives, in which stimulants are prescribed, and relied on as the principal means of cure, the patient's condition is desperate indeed, and the writing of a prescription for an ammonia julep, or any other stimulating compound, is about equivalent to signing his death-warrant. Our druggists are in the habit of predicting the death of the patients for whom they prepare such prescriptions. The desire to neglect nothing that may give patients a possible chance for life, still impels to the use of ammonia, brandy, cayenne, and wine-whey, and still they die.

Calomel.—There are few articles in the materia medica respecting which so much diversity of opinion has been expressed as in relation to the effects of calomel upon the class of fevers in question; its advocates claiming for it advantages superior to those claimed for almost any other therapeutic agent, in the treatment of any acute disease; while by others it has been condemned as eminently mischievous. Much of this arose from a kind of partisan feeling; its opponents, in many instances, being the avowed advocates of other remedies, or other systems of treatment, for which they claimed a superiority; each was blind to the good derivable from his opponent's remedies, and equally so to the imperfections of his own. Few thought of a combination of the two, or where this was adopted, still, the patients were always cured by the favourite remedy; the mischief, if any, by the one in less repute.

Though many of the discussions relative to calomel were in regard to its effects in yellow fever, all that was said of it was considered by a majority of writers as equally applicable to remittent fever, and so has been applied by almost all southern and tropical practitioners; these diseases having been considered by many, then, as at present, mere modifications of the same affection. There can scarcely, I think, at the present day, be a doubt of the benefit to be derived from the judicious use of calomel in remittent fever, though it certainly falls far short of that once claimed for it; all, while familiar with its use, must admit that its profuse administration in the south has been the cause of much mischief. The circumstances under which Rush, Chisholm, Johnson, and others, whose opinions have had so much influence in disseminating its use, administered it with so much success, must have been different; the disposition of the intestinal canal to take on inflammatory action must have been less; or, what is still more probable, their success may have been greater than that by any other treatment of the day, while it was probably less than would have followed a more sparing use of the remedy. This may be admitted without conceding that the opponents of this measure had not in their hands a remedy capable of a still more beneficial application, but of which many still more imperfectly understood the proper method of administration. It is no slight evidence against the utility of the *large* and frequently repeated doses of calomel, as recommended by Rush and Chisholm, that Dr. Trotter, an early advocate of the practice, subsequently condemned it. In the first volume of his Medicina Nautica, he uses this language:—"Some still persist in the stimulant plan, after all the evidence of those great physicians, which we have quoted, has been brought against it. This is adding horror to death." "Whoever attempts to controvert the practice of Dr. Rush, must bring unequivocal arguments indeed to support his method of cure." Yet in the second volume of the same work, published several years after the first, we find him expressing opinions diametrically opposite. "On reviewing the practice of different medical gentlemen in yellow fever, we are led to think, that the treatment recommended by Doctor Moseley has been incautiously resigned or laid aside for the *unaccountable administration of immense doses of mercurial preparations.*"

One main object with those who have relied most upon calomel, seems to have been the production of ptyalism,—looking upon their patients as perfectly safe, this state being once induced,—the cure being, in their opinion, the result of the ptyalism. On the contrary, the opponents of this practice took a different view of the matter. In the language of Bancroft—there is room to suspect, at least, if not to conclude, "that where persons have recovered from the yellow fever, after having been salivated, their recovery was not occasioned by the salivation, but was the consequence of such a condition of the powers of life, and of the functions connected therewith, as induced a mitigation of the disorder, for the same reason, and perhaps, cæteris paribus, in the same degree, as it favoured the operation of mercury upon such persons; and therefore, that although recovery has not unfrequently followed or accompanied salivation, the latter was not a cause of the former." We may readily, I think, admit, without at all doubting the curative action of the calomel under the circumstances spoken of, that the salivation may not have been the cause of the recovery;—nay, even further, that the recovery may have merely admitted of the salivation. Still, it does not follow that the recovery was not produced by the calomel, which, itself, may have induced a state of the system compatible with its salivant action: the latter not the cause of the cure, but merely an evidence of it, a coincident effect of the remedy. The action of calomel upon the salivary glands comes more immediately under our cognizance, and is, perhaps, the most prominent of its constitutional effects; but still, in seeking to explain the modus operandi of its curative action, if it is necessary in doing so to resort to some palpable effect of the remedy, is not its influence over all the secretory organs sufficiently manifest? May not its effects upon the secretions of the intestinal canal, upon the kidney, in fact, upon each secretory apparatus, be adduced as probably more explanatory of its curative influence than that upon the salivary glands? It may be said that the restoration of the perspiration; the increased flow, and more healthy character of the urine; the improved appearance of the intestinal excretions; the restoration of the secretion of the liver when the function of this organ has been suspended or perverted,—are, as well as the salivation, the consequences, not the cause of the recovery. It is probable. The essence of the disease—inflammation, engorgement, congestion, nervous disturbance, or something else, in another part of the system,—by which these organs may have been embarrassed sympathetically, may have been removed by the calomel, and they thereby permitted to resume their healthy action. In that case, what would otherwise appear primary, may be but secondary links in the chain, and the mercury not less, the curative agent.

There have been many facts and ingenious arguments brought forward by the anti-mercurialists in support of their views. For instance, it occasionally happens that patients die while fully under the salivant influence of mercury. A more common occurrence, is the induction of slight ptyalism during a temporary mitigation in the force of the disease, and its disappearance, permanently or temporarily, as the case may afterwards terminate favourably or otherwise, during any increase in the violence of the symptoms. As an example of this, incipient ptyalism, occurring during a remission, not unfrequently disappears entirely during the next exacerbation, and may, or may not return during the following remission, as the disease takes a favourable or unfavourable turn; or, as it is judiciously or injudiciously treated from that time. Cases again are adduced where mercury, having been given fully in an early period of the disease without any improvement, late in the disease, and long after a suspension of its administration, as recovery took place under the use, or at least during the administration of other remedies, salivation has simultaneously or consecutively supervened. In what would seem to be rather an unfortunate selection of cases by Chisholm, to illustrate his mercurial treatment, cases of this kind occur. In one case, that of Thomas Smith, the treatment was principally with mercurials from the time of his admission, September 9th, till the 16th, when it was omitted, and a different course instituted, consisting principally of the administration, by the mouth and in enemata, of the Peruvian bark, which was persevered in till convalescence. The progress of the case was vacillating; but on the morning of the 25th, a slight abatement in the frequency of the pulse was noticed, and on the evening of the same day, he "for the first time complained of ptyalitic symptoms." Facts of this kind may seem to carry weight with them, but they can scarcely be considered conclusive. We can conceive it possible that, in some cases, salivation may take place without the beneficial action of the remedy on the system generally—that a state may exist not incompatible with its salivant action, but in which its curative influence cannot be exerted, though we know that, as a general rule, this is not the case. Nor is there anything inconsistent either with our knowledge of the action of other remedies, that the peculiar or specific action of calomel should be partially manifested, under circumstances where its complete influence was impossible. In regard to the case which I have cited above, although it does not prove or sustain favourably, the views of the author from whom it is abridged, yet it cannot be said really to prove anything adverse to the favourable opinion he entertained of the powers of calomel. No remedy can be expected to succeed under all circumstances, nor should it be condemned where it has failed to do good, or has appeared to do mischief, until one and the other are ascertained not to be in consequence of its improper combination with other remedies calculated to counteract or prevent its curative influence, or from its injudicious continuance after it has done all the good it is capable of. After all, many medical disputes have been rather as to the comparative, than the positive utility of certain remedies. We find, upon examination, that Chisholm, one of the first and most determined of the mercurialists, freely and perseveringly used the Peruvian bark—while Bancroft, one of the most ingenious and decided opponents of the mercurial practice, acknowledged the utility of calomel *as a purgative;* but from the small quantities, repeated, in which he was willing to admit it, something more than its mere purgative action must have frequently been obtained by him. To secure all the good, without any of the deleterious effects of calomel in remittent fever, requires much caution and a much more sparing use than is generally made of it.

Although the curative action of calomel is frequently procured without the induction of ptyalism,—and could we clearly discriminate the exact stopping point, might always be procured without this,—still, its administration, so conducted as to favour the development of this state, is the most certain course also of procuring its favourable action upon the system generally, always stopping short of salivation when possible. In many cases we can do this, for its beneficial effects upon the disease are early enough observable to prevent it; but in other cases, salivation takes place as early as any decided mitigation of the disease can be perceived. Inflammation of the stomach and bowels, and a strong tendency to an aggravation of this condition from apparently slight causes, are prominent features in the disease in question. To procure the favourable influence of the remedy, its administration must be so conducted as not to augment this state, but rather to mitigate it. Nevertheless, under the mistaken notion that the larger the doses and the more frequently repeated, the sooner will its effects be developed, a state is often induced, by the excessive quantity of the remedy itself, totally incompatible with its curative action.

The bowels once freely evacuated, small doses, say three or four grains, every fourth or sixth hour, in combination with the opium or morphine, which in nearly every case it is necessary to administer, as has already been observed, on account of the irritable state of the stomach, will, in a majority of cases, bring the system much sooner under its influence than larger or more frequently repeated doses. Authors, in attempting to account for this seeming analogy, have explained it by supposing that, when large and frequently repeated doses have failed to produce constitutional effects, where smaller ones have done so under apparently similar circumstances, the absorbents, in the former instance, were indisposed to receive it; but without noticing the fact that the irritation produced by the larger quantity of the medicine was the cause of this indisposition, admitting one to have existed, on the part of the absorbents to take it up. A gentle action of calomel upon the bowels, sufficient to produce one, or, at most, two consistent evacuations in the twenty-four hours, instead of retarding, favours its constitutional effects. Indeed, occasionally a more brisk action for a short time favours the same end, by removing collections of fecal matters which, by the irritation they keep up in the intestinal canal, produce a state of the system unfavourable to its influence. To produce this effect, if it cannot be accomplished by enemata, an additional dose or two may be necessary, and justifiable on the grounds that the *temporary* irritation produced by it would probably be less hurtful than the permanent irritation kept up by such collections. In combination with opium, besides the necessity for the latter, on account of the irritable state of the stomach, it is advantageous also by enabling us to administer more of it without augmenting the irritation of the intestinal canal, and not in all cases, as some suppose, by retaining it longer in the system. Moderate doses of calomel combined with opium, will operate on the bowels, producing at the same time its constitutional influence, under circumstances in which larger doses alone would fail to do either. A moderate degree of inflammation in a mucous membrane may not be incompatible with secretion from the same, while a higher degree may be totally so. This is exemplified in what takes place in the different stages or degrees of bronchitis. Doctor James Johnson says, that a twenty grain dose of calomel will act as a sedative, and will rather constipate than purge. The manner of its astringent action has probably been already explained. There is more difficulty in explaining the former. That irritability of the stomach, under certain circumstances, will be moderated by it indirectly, by its removing irritating matters from the upper portion of the intestinal canal, can readily be conceived. I have never seen it produce any direct and immediate sedative effect. On the contrary, I have always had to regret the tendency of its primary action to increase the irritability of the stomach, except under circumstances when it may have been supposed to act as above suggested; the increased irritation then, being only less than that produced by the cause it removed. This disadvantage, however, it partakes with all other remedies used—opium alone excepted. Even a glass of cold water will, after having rested quietly on the stomach for a while, seem, to a limited extent, to have the same effect. Its general effects once manifested upon the system, a subsidence of the irritability of the stomach immediately takes place. Sometimes—and this proves incontestably the tendency of large doses to produce and keep up a state of the system incompatible with the favourable operation of the remedy,—under the moderate use of calomel, the patient may be doing well, convalescence perhaps commenced, and may be incipient ptyalism; which state of things in a few hours may be altogether changed by the injudicious administration of one augmented dose. Nor is it necessary that the latter should purge; the renewed irritation of the intestinal canal produced by it being alone sufficient to destroy all the benefits before derived from its more judicious use, whether purgation follow or not.

Of this "sedative" action on the stomach, by which, I suppose, is meant, a power to allay the irritability of the organ, I have many times heard physicians speak as a common occurrence in their practice. There is, in the treatment of remittent fevers, a great liability on the part of the physician to be deceived as to the effect of remedies. Many do not observe strictly the periods of exacerbation and remission, and their patients are "better" or "worse" just as their visits happen to occur during the one or the other. So with remedies; a certain article is prescribed shortly before an exacerbation, and at the next visit it is pronounced to have done mischief; another happens to be given just at the commencement of a remission, and, at the next visit, its effects are observed to have been admirable. In some of the instances in which this sedative action of calomel has been observed, by inquiry, I have found that its administration had been timed, fortunately for the development of this one of its effects, about the commencement of the remission; at which time, of course, there is a spontaneous abatement in the nausea and vomiting, as well as in all the other troublesome symptoms.

In a large majority of cases, where the treatment is properly conducted, convalescence will be established before any of the constitutional effects of mercury are developed; that is, where the calomel is given to assist and advance the cure, but not as a principal dependence. Where, however, it is prescribed as a main reliance, and is the principal agent in effecting the cure, it will be otherwise. Its peculiar action, if not upon the salivary glands, will be manifest upon some of the secernents about this time. Although many cases are promptly and readily cured by the action of other remedies, and before the calomel has had time to produce any other effect than that merely of evacuating the intestinal canal, still, in cases presenting any degree of severity, it is prudent so to administer what is given, as to favour most the development of its constitutional effect, with the object of ultimately profiting by it should the case prove obstinate or protracted,—and this can the more safely and consistently be done, because as a laxative it possesses advantages over most other articles, and because, so administered as to produce that degree of action on the intestinal canal which most favours the advancement of the cure by other remedies, will most certainly in the end secure its constitutional effects. I confess that in my own practice mercurials are less used than the confidence here expressed of their utility might imply. This is not because, by the judicious use of calomel, a great degree of success may not be secured, but because, as a principal reliance, the sulphate of quinine is preferable, as still more certainly controlling the disease; and so promptly, in many instances, that time is not allowed for the calomel to play more than a subordinate part.

In simple remittent fever, given as above directed, all the good it is capable of producing may readily be obtained. However, in those cases of the disease to which the physician is called late, after a free use of purgatives in the earlier part of the attack by the friends, the utmost caution must be observed in the administration of calomel. The same, of course, holds good in protracted cases where purgatives, calomel among the rest, have been used to any considerable extent by the physician himself. In such cases, such an irritable state of the intestines will frequently be found to exist, that even in small doses it is apt to produce pain, griping, and thin serous or bloody discharges. If admissible at all here, it must be given in very small portions, not over one or two grains, for instance, every five or six hours, well guarded with opium. There seems to be a necessity, indeed, that the quantity of calomel should be diminished in a ratio with the increased irritation of the intestinal canal, while the opium, as a general rule, should be increased in the same proportion. These remarks are strictly applicable to its use in congestive fever, where, indeed, in many instances, so much intestinal irritation exists, that even the large quantity of opium, necessary as a stimulant, is insufficient to prevent the smallest doses of calomel from increasing the number of evacuations, and consequently doing mischief. In the first-mentioned variety of the comatose remittent, it may with safety be administered more liberally, and its purgative action more freely permitted than in any other form of the disease. In the second form spoken of, the same rules should govern its administration as in the ordinary form of congestive fever, but with a more sparing administration of opium. One thing should not be forgotten in the administration of calomel,—the proper stopping point. Whenever a decided mitigation of the disease takes place under its action, in a majority of instances, the physician would do well to suspend it, or by all means avoid an augmentation of the dose, on the grounds that as a little is proving beneficial, the cure may be expedited by giving more. By such a course as I have already observed, the remedy itself may destroy the good it has already done. When, after the administration of calomel for some time, dark, nearly black evacuations, having a greenish tinge sometimes, about the consistence of the thickest molasses, take place, those physicians who are most attached to it, most familiar with its use, and who use it here with most success, always relax in its administration or suspend it altogether, gently soliciting a sufficient action of the bowels to carry off the intestinal secretions by the use of enemata. Here it will be found already to have effected all the good it is capable of, and may, if carried further, do mischief. These evacuations are looked upon, not as the cause of the cure, but as evidence of the favourable action of the remedy. At the same time I will observe that operations of the character just described are not in all cases the product of calomel, as I have seen them when but the smallest quantity of that article has been administered, and that, too, long before the appearance, too long reasonably to admit its agency. Under every circumstance of their production, they may generally be considered as indicative of a favourable change.

Quinine is decidedly the most important and generally useful therapeutic agent in the treatment of the various forms of remittent fever.

Notwithstanding the length of time since the discovery of the Peruvian bark, and the conspicuous position it has always held in the materia medica, the most erroneous opinions have generally been entertained of its properties, and the circumstances under which its use was indicated; although, in looking into the authors of past days, we occasionally discover one whose practical experience with the article led to very correct views, but too often these ceased with his own practice, or were confined within a small circle of partizans. Looked upon as highly stimulant and tonic, it was confidently prescribed where such remedies were useful, or where at least they were considered so by the prescriber. "Alexipharmic," "antiseptic," and "anti-putrescent," were also among the qualities with which it was endowed, and consequently, where as such it was prescribed, it was generally in combination with articles calculated to assist in carrying out the intention for which it was given, and, of course, such as would, in many cases, counteract the good effect which might have been obtained from the bark alone, admitting, as I have supposed, its action to be of an opposite character. Wine, alcohol, hot and cordial infusions and decoctions of different kinds, were among the principal articles with which it was combined; while to these, others added the richest dishes of animal food, and others, again, to fulfil effectually other objects for which it was given, added piles of heating bed-clothes, and a hot and suffocating atmosphere. Taking these things into consideration, together with the quantity of the medicine, even when given alone, necessary to produce its peculiar effects, and its extremely disagreeable taste, from whence must necessarily have arisen a great repugnance to it on the part of the sick, it must be acknowledged that no ordinary article of the materia medica could have maintained so high a stand, tottering and retrograding though at times it was. At one time it was high in public favour, with but few to oppose it; at another, it declined from its position, with but few to maintain its usefulness, according as it happened to have ingenious advocates, whose doctrines for the time predominated, or opponents, subtile in argument, whose standing and reputation gave their opinions influence. To show the length to which arguments for and against it have been carried, it may be observed that there is scarcely a symptom of the class of diseases in which it seems more peculiarly beneficial, that has not been attributed to it, and admitted by some who are not unfriendly to it, but willing to admit its use under certain restrictions; and hardly, in many instances, denied by its stanch supporters. Thus Pringle (*Diseases of the Army*, &c.), "having often found the breathing affected, or a *lurking fever remain* after its use, became at last doubtful whether it were not better to attempt the cure without it, or, at least, to delay, till, in the convalescent state, the patient required it only as a strengthener." By Mosely (*Tropical Diseases*), we are told that it "fixes immovable obstructions in the brain," "increases those obstructions in the abdominal viscera, which almost always follow severe disorders in hot climates, and often converts them into incurable scirrhi and dropsies," and yet these men were not among those who found it most injurious. On the contrary, they both used it freely, and with considerable advantage. By others, enlargement of the spleen; the "obstructions in the abdominal viscera," alluded to by Mosely; the dropsical affections consequent on these; the tumid abdomen, and bloated countenance—yellow or pale, cachectic and exsanguious—all the consequences of the slow and latent action of malaria, or of imperfectly cured malarious fevers, were attributed to the Peruvian bark. Even Senac, who seems to have understood its virtues better than many of his predecessors, admits its injurious effects in many instances, and says, (*On Fevers*, translated by Caldwell,) "it frequently attacks even the spleen itself. That viscus, as we have already mentioned, becomes enlarged, and inclines to suppuration. But I have learnt from experience, that this affection is to be attributed to the Peruvian bark as frequently as to the fever itself." Again, "we see many persons who, after the removal of the fever, languish under a pale, tumid, yellow countenance, an enlarged abdomen, and anasarca of the legs and other parts of the system." "We meet with others who experience certain anxieties or uneasinesses at those times at which the paroxysms had usually occurred," &c. Now all these, instead of being produced by the Peruvian bark, are but parts of the disease, or supervene in consequence of an imperfect cure from an inefficient administration of the remedy. These were admitted, I say, by Senac to be produced by the Peruvian bark, but most likely on the authority of others; the "experience" by which he learned it being, in all probability, not a *personal* one, for he elsewhere speaks of it as a "*divine discovery*," and says,—"*So efficacious and innocent is it, that among all the sick to whom I have ever prescribed it, I have heard no well-founded complaints respecting it.*" On the other side, how great must have been the confidence entertained of its medicinal powers by some, may be inferred from what Morton tells us of the physicians of his day arraying themselves in opposition to its introduction into general practice, for fear that it would destroy the profession of medicine, as "persons might then enjoy health without the aid of the doctor." Cleghorn (*Diseases of Minorca*), says, "the more experience I had of the bark, the more I was convinced of its innocency and efficacy. But the prejudices against this medicine which I had early imbibed from some of the most approved authors, made me for a long time use it with too much diffidence," and, in regard to the frequent relapses which, in his day, were attributed to the Peruvian bark, as by some at the present day to the quinine, he says, "that a delay in giving the bark, seems frequently to have produced the effect ascribed to its having been used too early." He also acknowledges that the increase in the severity of all the symptoms, which so frequently takes place with each exacerbation, when uncontrolled by medicine, he at one time attributed erroneously to the early exhibition of the bark. The southern physician of ten years back, when "*Johnson on Tropical Climates*" was with many the only practical guide, may be surprised on being reminded that in 1793, before the authority of Rush and Chisholm had rendered the use of calomel so popular, and had given a proportionate backset to the Peruvian bark, in an invoice of medicine for the half yearly supply of a regiment in the Island of Jamaica, the proportion of the two articles was, as four ounces of the former to sixty-five pounds of the latter.

Although the discovery of the quinine, the most important medicinal ingredient of the Peruvian bark, gives the physician of the present day great advantages over those of former times,—who were compelled to load the stomachs of their patients with ounces of a disagreeable and disgusting article for the purpose of procuring the medicinal effect of a few grains,—still, it is questionable whether the quinine has ever been so highly esteemed as the crude bark in its time, or its real properties better understood by medical authors of the present day, than were those of the bark by a few, more than a century ago. The discovery and introduction of quinine into practice, occurring after the general introduction of calomel into use, in the treatment of the diseases of miasmatic regions, during the time of its high popularity, and a comparison of the success obtained by the latter, with that by most former systems of treatment, on account of the many disadvantageous circumstances under which the Peruvian bark was administered, being rather in its favour, account for this. The views entertained in regard to the stimulant action of the bark, still continued to be promulgated of the quinine, although nothing could be more erroneous, while the word *inflammatory*, in many instances, replacing *putridity*, *putrescency*, *malignancy*, &c., still further operated against it, and prevented its introduction into use. For who would think of giving a tonic or a powerful stimulant in the commencement of an acute inflammatory disease?

Among other causes, too, "*la Doctrine Physiologique*" has had its agency in retarding the introduction of quinine into more general use. Broussais considered its administration even in intermittent fever improper in any case in which the intermissions were not perfect, or when any local irritation existed during the period of the intermission. Lancisi, Torti, and Morton had adopted opinions of a different character, which were opposed by Baglivi, and the authority of the latter is sustained by Broussais. How much credit the opinions of Baglivi, in regard to the Peruvian bark, were entitled to, may be judged of by the following passage quoted from him, and translated by Broussais himself. "Quant à l'ecorce du quinquina, il n'est pas prudent de s'y fier, a moins qu'elle n'ait été cueillie en Amerique, sous le sign du lion, et sur des arbres tournes vers le midi." The opinions of Morton, Lancisi, Werlhof, Torti, Senac and others, based upon the most extensive practical experience, the most perfect familiarity with the disease, and its remedy, had to yield to a cherished theory. It is much to be regretted, for the sake of humanity, that the practical skill of the physician is not always in proportion to the attractiveness of his style as an author. The opinions of Broussais, relative to its action under other circumstances, were opposed to the authors just named, and were also, so far, erroneous. "Une foule de personnes, dont les viscères de l'abdomen sont déjà travaillés par une phlegmasie ou une subinflammation chronique, s'exposent aux causes de l'intermittence fébrile, contractent des accès dont chacun augment l'intensité du foyer latent; et lorsque ce foyer s'est échauffé au degré de l'inflammation aiguë, les accès disparaissent, et la fièvre devient permanente. Combien n'ai-je pas vu de ces pernicieuses, exaspérées par le quinquina! Nos vieillards opulens, presques tous affectés de duodénites chroniques, en sont facilement saisis lorsqu'ils vont, sur la fin de l'été habiter leurs terres, arrosées par des étangs et par des rivières qui en font des espéces de marécages. Le docteur du lieu est appelé; il se souvient de ces classiques: Monsieur est trop delicat ou trop âgé pour qu'on puisse lui tirer du sang. Le sulphate de quinine est administré sans délai. La famille apprend à Paris que son chef est désormais sauvé et sauvé d'une fièvre pernicieuse des plus formidables par le bienfait du souverain fébrifuge et la sagacité du médecin qui a saisi les caractères pernicieux. Cependant la santé ne se rétablit pas: Monsieur est repris de la fièvre; elle devient continue, ou, du moins, elle a des paroxysmes si mal dessinés, qu'on ne sait plus si elle conserve quelque chose de son ancien caractère intermittent. Elle est devenue une rémittente ambiguë; on revient au kina, *non sans trembler*, mais il ne peut plus être supporté; Monsieur perd la faculté de digérer, et ne peut plus être calmé par les narcotiques. Il succombe avec les symptomes d'une gastro-entero-hepatic subaiguë, entée sur une chronique, qu'il n'est plus désormais possible de méconnaître, quoiqu'on fasse courir le bruit qu'il a été victime d'une fièvre cerebrale."* Now in this suppositious case, the effect of the remedy is misrepresented from want of knowledge of its true action, and the patient dies not from any positive injury inflicted by it, nor from inability on its part to control the morbid state described, but from its inefficient administration. Notwithstanding the opinion of Broussais to the contrary, the southern physician at all familiar with the use of quinine, will recognize in his graphic description, a condition of the system as certainly and as effectually controlled by it as the most simple intermittent. Had the quinine been resumed, "*sans trembler*," and fully and efficiently administered, the result would have been different. That disordered condition of the system, produced by the latent action of malaria, or by frequent relapses from imperfectly cured intermittent or remittent fevers, in which the patient is troubled with flatulence, and distension and oppression of the stomach after eating; indigestion; a morbidly craving but capricious appetite; bloated and cachectic countenance; enlargement of the spleen; intellectual torpor; slight irregular febrile paroxysms, and occasionally jaundice; is capable of being effectually cured by the decided use of quinine. Mild alteratives and chalybeates may be brought to its assistance,—but alone, it will do more towards effecting a cure in forty-eight hours, than the others without it in a week, or, than "leeches and gum-water" in months.

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* Examen des Doctrines Médicales, 3d ed., tom. ii. p. 178-9.

We are told by Broussais that Werlhof claimed for it great power in regulating the secretions,—to have found it useful in icterus,—and also used it, "pour un moyen de dégorgement des parenchymes et d'ouverture des secréteurs, puisqu'il le recommende malgré les obstructions du foie, de la rate, et même dans l'hydropsie," and believèd. "que ce rèmede ne saurait nuire dans les cas de fièvre prolongée."* For this reason Broussais accuses him of being, "destrait de l'observation de ce qui est, par l'image intérieure de ce qui doit être, c'est à-dire, de ce que sa doctrine secrété lui represent comme chose certaine." Yet how correct the opinions of Werlhof, how mistaken the views of his critic! At present, for instance, who would not think it a waste of time to attempt the treatment of engorgement of the spleen with anything but quinine,—except, perhaps, change of climate? "Comment donc les classiques, [viz., Lancisi and Torti,] dont je m'occupe présentement n'ont ils pas fait des semblables observations? comment ont ils pu affirmer qu'à force de répéter les prisés de quinquina ils finnissaient par consolider la santé de maladies qui se trouvaient dans le cas de ceux que je viens de designer?"† How comes it, it may be asked, that Broussais was here the mistaken party himself, while accusing others of wilful blindness and prejudice? The answer may be given in his own words: "Les théories peuvent seules rendre raison de ces différences."

In the treatment of remittent fever, few have ventured to give or recommend quinine in the early stages. By a large majority of authors, a course of preparatory treatment is recommended. The "*way must be paved*" by the use of blood-letting, mercurials, purgatives, or whatever else the writer has found, or imagines he has found beneficial. In other words, quinine has been prohibited, until by other means the violence of the disease has been subdued in a great measure, the powers of the system considerably exhausted, and remissions procured, so complete as almost to amount to intermissions. In this state of the remissions, with the reduced state of the system generally, it was supposed that its mysterious influence in preventing the periodical recurrence of morbid action might be made available without danger from its supposed stimulant operation ;—and with the erroneous impression that it possessed stimulant properties, there was no inconsistency in the recommendation. It must be admitted, too, that in those cases in which such a course is pursued with anything like success, that is, in the cases in which by any other system of treatment the violence of the disease is subdued, and the remissions rendered more perfect, the effect of the quinine is perhaps more prompt. In other words, when the disease has been in a great measure removed by other remedies, there is less left for the quinine to do, and less time is consequently required for its beneficial action. It would seem, that the supposition, that less of any given remedy would be required for the treatment of a case, almost already subdued, than a similar case taken during its original violence, would be a natural and probable one; and yet, the prompt and decided manner in which a case thus managed, and brought nearly to a favourable close by other treatment, would be immediately arrested by the quinine; while it was found that cases of the same character taken in the beginning, would not yield to the same doses; and the same period of continuance of the remedy, probably suggested the idea of its entire unfitness for the treatment of the early stages. Many seem to think, were we deprived of purgatives, the lancet and other depletive remedies, that quinine would be totally inadmissible in the treatment of remittent fever, as a previous course of these is absolutely necessary, in their opinion, to prepare the system for its use. The impression is an erroneous one, for although the use of other remedies will be found materially to advance the cure, there is nothing peculiar in the action of quinine which absolutely requires a course preparatory to its administration. True, it may not be capable of effecting as much alone as with the assistance of other remedies, but in this it is not singular. If in the case of uncomplicated remittent fever, a preparatory treatment has been considered absolutely necessary to the successful administration of quinine, the occurrence of local inflammation in combination with the fever, has been considered sufficient grounds for its total exclusion. On the contrary, nothing so much calls for its prompt and decided administration as this complication.

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* Examen des Doctrines Médicales, 3d. ed., tom. ii. p. 182.

† Op. cit., tom. ii. p. 179.

Setting aside the vast advantages to be derived from quinine, from its power of controlling the periodicity of diseased action, its prompt, decided and unequivocal influence, as a sedative, over the heart and arteries, renders it peculiarly applicable to all those cases of remittent fever accompanied by increase in the *force* and frequency of the heart's action. It is itself, when efficiently administered, the very best remedy for bringing about that absence of great febrile excitement, which was considered requisite for its successful administration as an anti-periodic. Undoubtedly, there will scarcely occur a case in which the assistance of other remedies may not advantageously be brought to bear. In violently inflammatory cases, where the pulse is full and firm, blood-letting may and should be used in conjunction with it; not as a preparative, but as an adjuvant, acting with and for the fulfilment of the same indication. In other diseases, and with other remedies, the same course is frequently pursued, of bringing several to bear for the production of the same effect. Many treat pneumonia principally with tartar emetic, but preceding or accompanying its administration with blood-letting, is no admission that the former is an improper remedy without the latter, or that a preparative course is necessary for its administration.

The proper evacuation of the intestinal canal in all acute febrile and inflammatory diseases is an important step. There is scarcely a remedy of any kind, the peculiar action of which is not more readily and favourably produced after the evacuation of the fecal matters. Those that require to be absorbed, are probably more readily received into the circulation under such circumstances, while those that exert their influence primarily on the nervous system, may do so more effectually, such sources of obstruction and irritation, calculated to counteract, in many instances, the effect of the remedies being removed. Opium, mercury, tartar emetic, colchicum, all are examples. Quinine, like the rest, acts more decidedly, and less of the remedy is required for the development of its peculiar influence, where moderate evacuations from the bowels have been previously procured; more than this is never beneficial, and even the time required for it cannot be spared in all cases.

Great mischief has been and is still the consequence of this impression that a preparatory treatment—a reduction of the force and violence of the disease—is necessary for the administration of quinine. Many cases, originally mild under this course of preparation, go on getting worse and worse, and further and further from the supposed fitting standard, with each succeeding exacerbation,—while other cases become totally irremediable by any course of treatment after a few exacerbations,—and cases, too, that might have been promptly arrested by quinine at the termination of the first or second exacerbation. It is only the originally less severe cases that will bear a long continuance of any system of treatment, in which quinine is not a principal remedy. Whenever a *protracted* case, presenting violent symptoms, is met with, the probability is ten to one, that it was originally a mild case, treated with drastic purgatives, perhaps blood-letting and diaphoretics—and entirely without quinine. Cases originally violent, almost invariably die while *preparing* for the quinine, and those of moderate severity become worse under this *preparation*;—perhaps, so reduced in flesh and strength, that all depletive treatment has necessarily to be suspended, without any abatement whatever,—almost invariably, indeed, with an augmentation of the febrile symptoms. These, may-be, subside slowly *after the suspension of treatment*, or, sometimes, although the fever may not be subdued, the quinine is ventured upon *in consequence of the debility*—and seems to prove powerfully *tonic*, by immediately arresting the progress of the febrile paroxysms, and thus *permitting* the healthy exercise of the organs of digestion.

Whatever the type or character of the fever, wherever there is reason to apprehend danger, no time should be lost in bringing the system decidedly under its influence. Where the remission is well-marked and of some continuance, "I generally prefer this period for its commencement, probably now from habit, more than anything else. Where the remissions are short, or when the case is urgent, and there is reason to apprehend a fatal termination in the next exacerbation, or where the disease is of so violent a character as to justify fears of the occurrence of any serious organic lesion, or a considerable aggravation of any that may already exist, it seems to me preferable to commence with it immediately, and this I generally do, without regard to the stage of the paroxysm." The fact, that the exacerbations frequently anticipate or come on at irregular and unexpected periods, and that, too, most frequently in cases of such violence, as to require decided and prompt measures for their successful management, is another reason for the immediate administration of the quinine. Two portions of from eight to sixteen grains each, according to the urgency of the symptoms, given within a couple of hours of each other, will most generally bring the patient under its influence two or three hours after the administration of the second portion. Where the case is of a very violent character, and but a short period is allowed the physician to act, before the time of the expected exacerbation, the whole of the above amount may be given at one time. Where even the physician arrives during the height of the exacerbation, when the case is one of great severity, the remedy should be immediately administered in full and decided doses, for the purpose of preventing mischief during the existing exacerbation, by at once bringing the arterial system under its sedative action.

The system once fully under the influence of the medicine, about eight grains every third or fourth hour will generally be sufficient to effect all the good it is capable of. Larger doses, indeed, may be given with safety, but they are rarely necessary, and frequently add much to the present discomfort of the patient. Where any decided inflammatory complication exists, the remedy should be continued until this is completely subdued, as its too early withdrawal, under such circumstances, rarely fails to be followed by renewed excitement of the arterial system, and an increase in the local inflammation. Where, however, the case is one of simple remittent, of quotidian or tertian type, the remedy need be continued but a short time after it has controlled one exacerbation. Where the type is that of a double tertian, it is absolutely necessary before its withdrawal, that two successive exacerbations should be controlled,—for the mere suspension of *one set* of exacerbations does not secure the patient against a continuance of the other. Under any circumstances, however, when the patient is once strongly under its influence, it should be *gradually* withdrawn, as its sudden suspension is apt to be followed by that state of reaction which so frequently follows temporary depressions of the circulation from other causes.*

The best evidence of the favourable action of the remedy, is a diminution in the frequency of the pulse. This is generally also accompanied by an increase in its volume, where it has been small and corded, and where it has been hard or firm, it becomes soft. An abatement in the severity of the other symptoms, soon follows this improvement in the pulse. The skin becomes moist and cool, sometimes even so much so as to excite considerable alarm in the patient or his friends. This coolness of the surface attending the perspiration produced by quinine, may be readily recognized by the state of the pulse and other marks of the action of the remedy, and of an improving condition generally,—and whatever the alarm of the patient and others, the *initiated* can smile in satisfactory security. The tongue also becomes gradually moist, the thirst diminishes, and an improvement in the appearance of the exacerbations soon succeeds.

The influence of the remedy once fairly induced in the system, it is rare for another exacerbation to follow, and a gradual and continuous amendment generally goes on from this period. Occasionally, however, another exacerbation does take place, and during its continuance the patient's situation, in some cases, is more uncomfortable than during any previous exacerbation. Not that in regard to the symptoms generally, any increase has taken place upon the previous exacerbation; these may be even slightly improved, but an indescribable feeling of anxiety and distress is complained of. In a few instances, most of them in one family of mulattoes, where an *exacerbation occurred while the patient was pretty decidedly under the influence of quinine*, a most distressing delirium has supervened, attended with jactitation, scratching of the nose, pulling at the lips and tongue, and sometimes the hair; but has always subsided at or before the usual period of remission, and its recurrence always prevented by bringing the system still more fully under the influence of the remedy. I have never been willing to attribute these annoying symptoms altogether to the quinine, as in all the cases in which I have observed it, opium or some of its preparations had also been given; and, in some instances, the latter article alone has seemed to be the cause of very similar symptoms.

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* In the July number, for 1844, of the American Journal of the Medical Sciences, in an article on the treatment of the inflammatory affections of malarious districts, in speaking of quinine, I remarked,—"Its most general effect, however, is that of a sedative; more certainly controlling the action of the heart and arteries than any remedy with which I am acquainted." In commenting upon this, in the March number, for 1845, of the New Orleans Medical Journal, my friend, Dr. P. H. Lewis, of Mobile, observes: "Had Dr. Boling seen this fever, (yellow fever,) he would have said, if there is no remedy from the crucible of the chemist, there *is one*, at least, from the storehouse of nature, which exerts a greater influence over the heart and arteries than does quinine; that remedy is the unknown agent of yellow fever." In this matter, Dr. Lewis may be assured that he is "in error." Dr. Boling would never have thought of calling "*the unknown agent of yellow fever*" a "*remedy*."

Sometimes, the system being apparently under the influence of quinine, the first exacerbations, after this state is induced, will be but imperfectly controlled, and the case perhaps go on in this way for some time, each succeeding one, however, being less and less severe, till they finally yield. At other times, the first exacerbation after the system has been brought under the influence of the remedy, will seem to be controlled only so far as the heart and arteries are concerned, the pulse remaining at the same standard as during the remission; sometimes, indeed, where very full doses have been given, even less frequent,—while all the other symptoms give evidence of a severe exacerbation. The tongue, for instance, has again become dry,—supposing it not to have been so during the previous remission,—while the thirst, nausea and vomiting, heat of skin and general distress, all attest a high state of fever. This state subsides at the usual hour of remission, if not before, and nothing but a continuance of the remedy in moderate doses, through the period for the next exacerbation, is necessary to prevent its recurrence. Frequently, indeed, especially in cases taken under treatment at a sufficiently early period to prevent the occurrence of serious organic lesions, even this further continuance of the remedy will be unnecessary, and convalescence may be considered as commenced, with the subsidence of this modified exacerbation.

Although it is in all those varieties or shades of the disease termed *pernicious*, and recognized as such at first, that the quinine should be most promptly resorted to, yet we should not forget its *insidious* character, and that at times, cases, apparently of the mildest form at first, suddenly and unexpectedly assume a grave character, and perhaps prove fatal in the first severe exacerbation. It is true, that a large majority of the cases of simple remittent fever, if drastic purgatives, emetics, and "diaphoretic mixtures" are not ventured upon too freely, may be dallied with some time before they are beyond the control of quinine, yet every now and then the neglect of its early administration will have to be regretted.

It is in that form of pernicious fever generally called congestive, that its administration has to be conducted with most caution,—and this is peculiarly so in those cases not originally very violent,—but which have been made so by the injudicious use of the lancet and drastic purgatives. Here, in addition to that *feeling* of prostration and debility which attends all severe cases of remittent fever, we have a more *genuine* state of debility superinduced by the lancet and purgatives conjointly,—while the latter have also, at the same time, played a part of their own, in producing inflammation of the stomach and bowels, or in greatly augmenting that which may have already existed, perhaps as a necessary part of the disease. Here we want the remedy to act in breaking up the periodicity of the disease, while, if possible, its depressive action is to be avoided or counteracted. If we fail to administer enough to arrest the expected exacerbation, the patient dies in it, perhaps, while, at the same time, it is to be dreaded that the quantity necessary to effect this may destroy by its depressive action. Unfortunately, too, the state of the stomach and bowels renders the free use of stimulants generally, (by which this depressing action of the remedy might be counteracted while its other property is brought into play,) of doubtful propriety. In cases precisely similar to our congestive fever, Senac advised the combination of serpentaria with the cinchona, and where the stomach is sufficiently retentive, there are, perhaps, few better articles that we could use with the quinine. There is nothing, however, which so well sustains the system against the depressing action of the principal remedy as opium; while, at the same time, it alone seems at all capable of controlling the irritability of the stomach. Piperine, under such circumstances, I have never seen do anything but mischief, acting powerfully as a local irritant, and but slightly as a general stimulant.

In many cases, such is the irritability of the stomach, even during the remissions, that we cannot rely with any certainty on a sufficient quantity of medicine being retained to produce the desired effect,—indeed, in some cases, everything is rejected almost as soon as swallowed. Under such circumstances, the quinine may be administered in enemata of starch. From twenty to thirty grains may be given in a couple of ounces of starch, every second hour, till the system is brought fully under its influence,—after which, its effects may be sustained by less frequent repetitions—say every third or fourth hour. As a stimulant, the opium may be administered in the same way, and as much as the patient can bear without narcotism, say forty drops of the tincture with each of the first three or four enemata, and double that quantity when the intervals between them are extended. Sometimes, when diarrhœa exists, and especially where the rectum has been rendered irritable by the previous administration of laxative enemata, there is some difficulty in retaining the quinine. When this is the case, the irritability of the rectum should be allayed before the quinine is commenced with, by an enema of starch, containing from 80 to 100 drops of the tincture of opium alone.

The impression still exists, even with many of those who venture on the use of quinine in remittent fever, that it is only during the remissions that it should be given, and that mischief must certainly be the result of its administration during the exacerbation. So far is this from being true, that there is nothing with which we can more effectually aid in cutting short an exacerbation than the quinine itself, commenced and administered freely during that time. In most of the cases to which I have alluded, in which I had a suspicion of certain unpleasant symptoms being produced by the quinine, either the remedy had been administered at so late a period of the remission, or the exacerbation had anticipated so much, that its first effect upon the system generally was felt just at the height of the exacerbation. But in those cases, and they were few, in which unpleasant effects even seemed to be produced by it, it rarely failed to diminish the length of the exacerbation. Undoubtedly the action of the quinine is, in most cases, more favourable during the remissions than during the exacerbations. Less of the remedy will be required to produce its peculiar effect, and this may more promptly be brought about. But is it alone in this respect? Is it not the same with almost every article of the materia medica? Who ever saw a cathartic act as mildly and as efficiently during an exacerbation of fever as during the state of remission?

The drinks should be sparing in quantity, but may be allowed frequently. An attempt to satisfy the craving for cold water during a high exacerbation would be entirely futile, while a free indulgence only adds to the nausea and vomiting, and epigastric oppression. Most generally the desire is for pure cold water, with the addition occasionally of acids. A single swallow of iced water, alternated occasionally with iced lemonade, or some other palatable acidulous beverage, may be allowed every fifteen or twenty minutes; while the patient should be encouraged to wash his parched mouth occasionally with the same. Small lumps of ice may also be occasionally swallowed with benefit. Effervescing draughts and mixtures, even when not actually injurious by any other quality, prove so from the distension of the stomach they occasion, and are beneficial in no way.

During the height of the exacerbation, when the temperature of the surface is much elevated and *general*, sponging the body over with cool or tepid water, frequently has a tendency to allay the febrile excitement. Where it produces any unpleasant chilly sensations to the patient it should be discontinued, as, under such circumstances, it is apt to produce slight rigors, followed by increased excitement and irregularity in the course of the exacerbations,—a thing to be avoided, if possible, as calculated to embarrass the physician in the timing of his remedies. It should be commenced at the head, descending to the chest and abdomen, and lastly to the extremities. In the earlier period of the exacerbation, the sponging will frequently have to be desisted from, on account of its producing chilliness,—while an hour later, though no increase in the temperature of the surface may be observable,—it will be borne with pleasure. Its beneficial influence is generally much more evident with children than with adults. It is, however, much less immediately and decidedly beneficial with any class of patients in remittent fever, than in scarlatina.

In cases attended with severe headache, coma, or delirium, where the heat of the surface is *general*, and the *pulse full* and *firm*, the cold douche to the head, while the feet are immersed in warm water, is of much service; while, on the contrary, where there is the least irregularity in temperature, where, for instance, the head, chest, and abdomen are hot, and there is the slightest tendency to coolness of the fingers and toes, with a small or corded pulse, even with the presence of coma or high delirium, the cold douche never proves beneficial, and occasionally, perhaps always, injurious. It seems to have no influence in moderating the heart's action, or diminishing the quantity of blood transmitted to the head, while, by constringing the vessels of the surface, the whole mass is forced in upon the brain. In one post-mortem examination that I have made, where the cold douche was freely used under the above circumstances, the patient having been furiously delirious, with a small and corded pulse, while the action of the heart itself was loud and tumultuous, the brain and membranes were found completely gorged with blood, while scarcely a red dot was observable in any part of the scalp, or even in the vessels of the face.

Diet.—All that is necessary to be said on this subject can be comprised in but few words. In nineteen cases out of twenty, until the fever is arrested and convalescence established, nothing to eat should be allowed. The duration of the disease is seldom sufficiently extended to produce any want of nourishment in the system. Either the patient is convalescent or dead in a few days, few cases extending much beyond a week. In the few rare cases that become so protracted as to require for the system nourishment before convalescence may be said to have commenced, but the lightest and most palatable articles can be used, so fastidious is the taste, or rather so complete is the disgust for everything eatable. Weak wine whey, chicken soup, &c., are perhaps the most useful articles. Porter will sometimes be tolerated, and may occasionally be found useful. In some cases, where the want of nutriment seems to be felt by the system, while the continuance of the morbid state of the stomach prevents its being taken in that way, enemata of rich soup, beef-tea, &c., sometimes seem to have a sustaining influence; and, what is curious, I have several times seen cases in which a strong feeling of disgust for particular articles has been produced in this way, so that the mere thought of them would create nausea, as is the case when a patient too early or too freely indulges his appetite—the feeling alluded to requiring the enemata to be varied several times.

But if the disgust for food was excessive during the continuance of the disease, convalescence once established, the appetite is proportionately craving. It returns almost suddenly, and no persuasion, no advice, in many cases, can restrain the patient within the bounds of prudence. Consequently relapses from improper indulgence of the appetite are by no means unfrequent. Light soups the first and second day of convalescence, after which rice, mush and milk, broiled birds, &c., may be allowed, gradually increasing the diet in strength and quantity as the digestive power is restored, and not in a ratio with the demand of the patient's appetite.

I have now, I believe, glanced at all the principal therapeutic agents that

I have found beneficial in the different forms of remittent fever; but it may not be amiss to notice one or two that have had their warm advocates, and are not yet entirely excluded from the list of the practitioner.

Of Emetics.—No language more emphatically expressive of their mischievous effects in remittent fever, can be used than that of Mosely, in relation to their effects in the yellow fever of the West Indies. "How often have I seen and lamented the effects of emetic tartar, given to remove the supposed cause of the treacherous symptom of vomiting: even in slight degrees of fever in the West Indies, in young plethoric subjects newly arrived, the stomach has been sometimes destroyed by it. Instead of removing the irritating sickness in this fever or exciting a diaphoresis, a spasm has been produced in the stomach, incessant vomiting, inflammation; the vessels of the thorax and head have been stifled with blood, *and the patient has vomited away his life.* Nature's index here is misconceived." Yet so strong is the feeling on the part of the patient that vomiting will relieve him, that almost his first request will be for something to produce this effect, and the utmost persuasion, in many instances, can hardly prevent him from inserting his finger in his fauces, and by other means augmenting the tendency to vomit; and he is encouraged to a repetition of these attempts by a feeling of relief experienced temporarily, after each evacuation from the stomach, however small. The physician has often to deplore, and with difficulty to combat the due effects of emetics taken before his arrival for the removal of the "load on the stomach," the oppression and nausea, which they are only calculated to augment. Of the whole class, tartar emetic is perhaps the most *poisonous.* "My reasons," says Bancroft, "for condemning the use of emetics, are, first, that they commonly fail in their principal object of removing nausea, which is very apt to continue, and even in a greater degree than before; for this symptom rarely proceeds from any load of undigested food, or bile, or phlegm on the stomach, but seems rather to proceed from other causes, such as sympathy with the morbid state of the brain, or of the surface of the body, or else from an inflammatory affection of the coats of the stomach itself, and these are causes which emetics have but little power to remove." It would probably not be too much to say that the vomiting *almost always* depends upon the latter cause, and that this emetics have *no* power to remove.

Diaphoretics.—If we confine the word diaphoretic, in speaking of this disease, to those agents that really prove such in it, then are they applicable to its treatment. Blood-letting, quinine, opium, cold ablutions and calomel, all, when properly applied and acting favourably, prove more or less sudorific; but in that large class of remedies generally denominated diaphoretics and sudorifics, there are few that can be said to have such an effect in the fever in question. On the contrary, the most of them have a diametrically opposite effect by augmenting the inflammation of the stomach and bowels, upon which at least many of the febrile phenomena are dependent;

and all of them increasing the nausea and distressing oppression at the epigastrium, if not by any more injurious property, at least by their bulk and taste, and prove, also, eminently mischievous by the disgust they create for, and the inability they produce of retaining other and important remedies on which the cure depends. Dover's powder, small doses of ipecacuanha, pulvis antimonialis, and all the various diaphoretic mixtures, compounded of acetate of ammonia, spiritus nitri dulcis, vin. ipecac., paregoric, &c., popular though they are with some, should be avoided. The Dover's powder is not only objectionable on account of the ipecac. it contains, which adds to the incessant nausea, but also from the sulphate of potash, which, if continued long, never fails to induce a high state of irritation of the bowels, followed by frequent thin and watery, sometimes bloody stools.

Post-mortem appearances.—There is some probability that these differ a good deal in different seasons, and in different localities, as considerable diversity exists in the descriptions of authors.

In regard to the lungs, heart, kidneys and bladder, there is nothing at all in the post-mortem appearances at all characteristic or peculiar. These organs, as in all other acute diseases, may all be at times the seats of accidental complications, and when so, of course give post-mortem evidences of the same. The same may be said measurably of the brain, which, although at times affected with inflammation and congestion, and presenting the post-mortem evidences of these conditions, is nevertheless frequently found in an entirely healthy state. In all the cases of the comatose remittent that I have examined, great congestion of the brain and membranes has been present. In that shade of the comatose remittent last described I should not expect to find these conditions present. But I have never examined a case, none of the kind having ever proved fatal in my practice.

The *stomach* I have invariably found presenting decided traces of recent inflammation, and there is no other organ in regard to the post-mortem appearances of which authors have been so unanimous. We are told by Pringle, that Thomas Bartholinus, on finding *the stomach and duodenum always inflamed and mortified*, in a malignant remittent fever that prevailed in Copenhagen in 1652, *assigned these parts as the principal seat of all malignant fevers.*

The *intestines* also present frequent marks of inflammation, though not so universally as the stomach. The duodenum most generally seems to suffer from a continuation of disease from the stomach, and the mucous follicles or glands of Brunner of this part, as first noticed in this disease by Doctor Stewardson, will generally, though not invariably, be found enlarged. The jejunum is, perhaps, less frequently diseased than any other part of the intestinal canal, though occasionally it will be found to contain patches of ramiform and capilliform injection. The ilium, more frequently than any portion of the intestinal canal, the stomach, and, perhaps, duodenum alone excepted, presents traces of inflammation, in all cases increasing in intensity as we approach the ileo-cæcal valve. The glands of Peyer, to which attention has been more particularly directed of late in consequence of their diseased condition being considered the anatomical characteristic of typhoid fever, have, by different observers, been found in different conditions. They are stated by Doctor Bartlett to "have been found uniformly healthy." He has here reference merely, however, to cases examined by Doctor Gerhard and Doctor Stewardson, in the Pennsylvania Hospital at different times. In September, 1843, I examined a case of remittent fever, an originally mild one, but which, by neglect and mismanagement, was permitted to assume a grave form. The case was unusually protracted, commencing August 7th, and terminating fatally on the 17th of September. In my notes of the post-mortem examination, which was made three hours after death, it is stated that "the small intestines presented slight traces of inflammation throughout nearly their whole extent, increasing in intensity in descending to the ileo-cæcal valve. The elliptic plates were of a much darker colour than the rest of the mucous membrane, granular to the eye and touch, the margins well-defined and slightly elevated, and some of them presenting distinct traces of ulceration. These characters were more distinct just above the ileo-cæcal valve, and were gradually lost in ascending the intestine. Mesenteric glands slightly enlarged." In another case, of a negro girl, terminating fatally on the ninth day, August, 1844, examination five hours after death, it is stated, that there was "considerable inflammation of the small intestines; elliptic plates of ilium elevated, granular to the touch, and darker than the rest of the canal. Solitary glands much enlarged, many of them ulcerated; the margins hard, and the edges of the ulcers abrupt: the ulceration in some places extending through all but the peritoneal coat. Mesenteric glands a good deal enlarged." In this last case diarrhœa existed, in the former not. These are the only instances in which I have observed any morbid alteration of the elliptic plates. They are, however, almost the only cases terminating fatally at so late a period that I have been permitted to examine. The result of these has induced me to think it probable, that in many protracted cases some alteration of the glands of Peyer and Brunner will be found, and at an earlier period in those which have been attended with diarrhœa.

The *spleen* is, in a majority of cases, found enlarged, dark, and somewhat softened; and occasionally this alteration is so great that the interior of the organ resembles a mass of black clotted blood contained in a coarse cellular mesh; and so pulpy as readily to yield to but the slightest pressure. This alteration of the spleen is, however, more a consequence of what may be called the latent action of malaria than a necessary accompaniment of remittent fever; as in no instance have I ever found enlargement of the organ during life, or any morbid appearance after death, in a first attack of remittent fever, in a person who had not previously resided some considerable time in a malarious region. In all cases, however, where any enlargement exists prior to the attack, a considerable augmentation almost invariably takes place before the patient dies. In almost every case, perhaps every one, where any enlargement of the spleen is present during an attack of remittent fever, or after death from the same, on inquiry we may be satisfied of its having existed prior to the attack.

The *liver* is the organ to which, from his preparatory instruction, the young physician, commencing practice in the south, will at first have his attention more especially directed, and will be governed much in the application of his remedial agents by its morbid or supposed morbid condition. A few authors speak of having found it but slightly altered, but by a large number of those whose authority has been most influential, we are led to expect manifest and palpable changes. In the one case which seems to have determined Dr. James Johnson in the rejection of the Peruvian bark as a principal agent, and to have decided him in regard to his subsequent practice, blood-letting and calomel, the liver was found "so gorged, as it were, with blood, that it actually fell to pieces on handling it." Although we are not taught in all cases to expect to find the alteration so extreme as in this instance, yet in a less marked degree, this is the character of what we are taught to expect in almost all. I had so strongly made up my mind in regard to the existence of this state of the liver, in the commencement of my practice, that it was a matter of great surprise to me *never* to find well-marked fullness or tenderness of the right hypochondriac region. This surprise was far exceeded, however, by that which I felt on finding no traces of engorgement of the liver present, in my first post-mortem examination. I looked upon this case, however, as an exception; but all my future examinations revealed the same state of things.

In no case that I have ever treated have I found during life any evidence of affection of the liver more than that functional derangement partaken by it in common with every other organ during the state of febrile excitement; and I will venture to say that, in nearly every case, this functional disorder will be as palpable and as well marked in the kidneys as in the liver. I will also remark, *en passant*, that in a practice of nine years in the south, I have never had under treatment one single case of well-marked and unequivocal hepatitis, acute or chronic.

Disappointed in not finding the changes in the liver which I had been led to expect, and the morbid alterations, if any, being so different from what others had described, and less easy of appreciation, *particularly to one not accustomed to frequent post-mortem examinations*, I was led to believe that lesions of this organ were less frequently found after death than of almost any other.

In an article published by Dr. Stewardson, in the *American Journal of Medical Sciences* for April, 1841, in which, among certain other post-mortem appearances which he is disposed to think somewhat peculiar to remittent fever, he describes an appearance of the liver not heretofore particularly noticed, and, from the result of a good many examinations, arrives at the conclusion that it is probably "the anatomical characteristic of that disease." This alteration is described as consisting, in most cases, in a flabby state of the organ, the colour externally being of a bronze or a mixture of bronze and olive, and internally of an olive, with an entire extinction of the natural reddish-brown. It appears to have been generally of the natural size, and "the two substances so blended as to be scarcely distinguishable." The appearances described by Dr. Stewardson, have since been found by others, and are particularly noticed by Dr. Swett in the *American Journal of Medical Sciences* for January, 1845. I have given above what, on a pretty close examination of Dr. Stewardson's cases, seems to me to have been the appearance in a large number of them, but still the description of the "*anatomical characteristic*," as given by himself, differs materially from this in some of the others. For instance, we have one described as being "of a pale, slightly greenish lead colour," one "of a dull bronze," and in another the "surface of a dull lead colour." In the cases of Dr. Swett there is also found this diversity of appearance in the colour of the liver. One case "presented externally a slate colour, which, when placed in a proper light, gave a bronze tint." Another was of "a pale slate colour, and in many parts a bronze tint was perceptible,"—and another "externally was of a bronzed appearance."

On the appearance of the above article of Dr. Stewardson, my attention was again directed to the liver, but I have been able in but a very few instances to find any alteration; and even where such did exist, a slight exertion of the imagination would have, perhaps, been necessary to trace a close resemblance between them and the descriptions of Dr. Stewardson. Indeed, in a large proportion of cases, the organ, so far as I am capable of judging, was entirely healthy. Where it was otherwise, the *concave* surface of the organ was of what appeared to me an uniformly bluish-slate colour, extending to about the depth of a quarter of an inch; the line of demarkation between this, and that portion which presented a natural appearance, being well defined. In every case in which I have observed this appearance, with one exception it was confined to the concave surface, the convex surface and the interior being entirely healthy. The exception was in a case which, in the beginning, presented the symptoms of what is generally denominated verminous or infantile remittent fever. In its progress peritonitis supervened, and the patient died about the beginning of the fourth week. On a post-mortem examination, a considerable quantity of serum and coagulable lymph was found in the abdomen, and *both* surfaces of the liver were found uniformly of the colour above alluded to, the interior of the organ being apparently healthy. This appearance of the liver I have observed in an equal proportion of cases, I think, in the post-mortem examinations of patients dying from other diseases; though I have no recollection at this time of having observed it in any case, in which the patient had not laboured under an attack of remittent or intermittent fever, within a month or six weeks previous to the commencement of the disease causing death.

In conclusion, I would observe, that all my remarks in regard to the symptoms, treatment, and post-mortem appearances of remittent fever, are made with reference to the disease as it prevails here in Montgomery, and in its immediate vicinity, for, as I have before observed, these may all vary in different localities. "*Romæ scribo et in Ære romano.*"

Art. III.—*An account of a remarkable case of Injury of the Head.* By William Forman, M. D., of Princeton, N. Jersey.

The elevated functions of the Brain, its extensive sympathies, and its immediate relations to the moral and intellectual phenomena, give to its injuries and diseases a character more exalted than those of any other part of our structure. It is only by a series of careful observations upon the seat of these lesions, and connecting the parts they involve with the particular functions impaired or suspended, that we can ever hope to arrive at anything like truth in our researches after the specific locality of its various powers, whether these relate to its action as a physical organ, or to its higher connection with the operations of the mind. With this conviction I offer to the profession the following case of injury of the cerebrum, which, if it present nothing new in regard to the functions of this organ, it supplies to the chain of results derived from experiments on inferior animals, an additional link obtained directly from the brain of man. For the account of the accident and its immediately attending circumstances, I am indebted to my talented young friend and former pupil, Dr. Clayton Blackwell, who says:—"At eleven o'clock on Friday morning, Sept. 26, 1845, Mr. R. S. B., aged 17 years, a student in the College at Princeton, accompanied by two of his young friends, came to the house of my father, a mile and a half distant from the village, on a shooting party, and while preparing for the sport of the day, he accidentally discharged his gun, and the contents (duck shot) passing the left side of his head, tore away the ear above the concha, together with a portion of the scalp and temporal muscle, making a frightful wound in the integuments, and producing a compound comminuted fracture and depression of the lower and middle part of the parietal bone. He leaped into the air and fell upon his face on the ground. He was insensible, convulsed, and bleeding profusely from the wound. There was some hemorrhage also from the nostrils, and I should think that he lost in all a quart of blood. His pulse was imperceptible. Having no means at ommand by which I could render him any assistance, his companions were dispatched to the village for his friends, and a physician. You eing absent, Drs. Dunn and Alexander visited him. Before their arrival, owever, reaction had taken place. He had vomited several times, and spoken frequently, exclaiming, 'Boys! Boys!' and once, when addressed by name, he answered 'What?' The wound was now occupied with coagulated blood, and a small quantity of brain. The fracture comprised a ittle more than an inch in width of the inferior part of the parietal bone, and was bounded posteriorly by a line, extending from the centre of the meatus auditorius externus to nearly a right angle with the sagittal suture, from which there proceeded under the integuments anteriorly two fissures, including between them two deeply depressed fragments, the inferior, or that next to the squamous suture, being much the larger.

"Dr. Dunn pronounced the injury in itself mortal, and that it must quickly terminate. Indeed, he thought him dying, and even to dress the wound a work almost of supererogation. The blood, however, was washed off, the chasm filled with lint, and a bandage applied. During these services, the patient evinced great sensibility, exhibiting signs of pain on the slightest touch of the parts. After the completion of the dressing, his pulse was small and feeble. The friends of the young gentleman now had him conveyed to the village, to the house of the late Prof. Dod, from whom he received every care and attention that affection could devise, or kindness bestow. Through the remainder of the day and night, and the following day, he was partially comatose, though easily aroused; his breathing was slow and at times stertorous. He vomited occasionally, and the matter ejected was mixed with blood. His pulse was slow, beating but forty-three strokes per minute, and very feeble. The pupils nearly natural in size, and not devoid of sensibility to light. Temperature of the skin below the healthy standard."

27th. At nine o'clock on this (Saturday) evening, having returned to my home, I visited the patient in consultation with Dr. Dunn and Dr. J. S. Darcey, of Newark, and found him in the situation described by Dr. Blackwell. After a careful examination of the fracture, it was agreed that a portion of the bone should be removed by means of "Hey's Saw," large enough to allow the use of the elevator to restore the depressed pieces to their natural level, while symptoms should dictate the treatment to be afterwards pursued.

The performance of the operation was referred to Dr. Darcey, who, after making an incision through the integuments of sufficient extent to permit the free use of the saw, removed a portion of the parietal bone somewhat triangular in shape, about an inch in its longest direction, and eight lines wide at its base. The larger fragment was elevated to its proper position, while the smaller, of an irregular quadrilateral figure, about eight lines by four, beaten down upon the dura mater, and entirely detached from its natural connection, was removed. About three lines above the superic edge of the elevated fragment, the pulsation of the brain brought into view through a rent in the dura mater, another piece of bone, a scale, almos entirely from the inner table of the skull, of an irregular figure, and ha an inch in its greatest diameter. On the removal of this a gush of brai followed, which continued to flow, until half a wineglassful was compute to have been lost.

The wound being cleaned, a dressing of lint with simple cerate and compresses, secured with adhesive straps and a roller, was applied, and th patient placed in bed. It may be proper to state that the edges of the lacerated scalp were retracted from those of the temporal muscle more tha half-an inch, much swollen, and so irritable that removing the hair preparatory to the operation, and the necessary handling of them during it performance, subjected him to great apparent suffering. His pulse ros immediately to eighty strokes in a minute, and the night was passed i alternations of coma and restlessness. The wound discharged so muc blood and brain that the dressings and pillow were saturated with them.

28*th*. Has been restless through the day, frequently rising from his bec and strongly resisting every attempt to prevent him from doing so. Puls 110, small and compressible; skin soft, and below the healthy temperature Tongue natural, with the exception of a delicate veil of white. Bowels nc having been moved since the accident, an injection was given him at fou o'clock, P. M., which operated well.

29*th*. Action of the iris healthy; all other symptoms as yesterday. Dı Dunn, having withdrawn from further attendance on the case, at four o'clock P.M., I dressed the wound, a proceeding which was rendered necessary b the rigid unyielding condition of the bandages, and the excessive fetor c the accumulated discharges. The adhesive straps used to secure th dressings after the operation for elevating the depressed bone, were al found detached, and a large fungus cerebri was seen projecting through th aperture in the cranium. This substance was not composed of *pure* brain nor covered by any of the membranes of that organ. Neither was it forme of coagulated blood, as Mr. Abernethy supposed some of these production to be; but it was an organized body, springing from the brain, and subsisting by its own mode of nutrition. The whole surface of the wound, th pericranium, the temporal muscle, and the edges of the scalp, are pourin out an abundant secretion of pus. The ulcer was carefully cleansed, an dressed with simple cerate, while compresses wet with lime-water wer applied to the fungus after the manner of Sir Astley Cooper.

30*th*. For the first time since the accident, he manifested a return o consciousness last evening, by answering correctly such questions as wer proposed to him, and by a ready compliance with whatever requests wer made of him; though he is still incoherent at times, muttering deliriousl the expression of his bewildered thoughts. He attempted to relate some ning this morning, but could not confine his attention to the subject suffi-iently long to enable him to do it intelligibly, and after a laboured but nsuccessful effort, of which he seemed himself to be conscious, abandoned in despair, exclaiming "I can't." About noon his mother was permit-ed to visit him, for the first time since the operation. He recognized her t once, and taking her hand, embraced her with the tenderest affection. Since four o'clock this afternoon, has been very restless. Pulse eighty, mall, and quick. Skin on the inferior parts of the body and lower extre-nities, below the natural temperature, while over the chest it is hotter than n health. Tongue white, and thirst urgent. Directed rice-water and emonade for his drink; and as his bowels had not been moved since the lay before yesterday, requested half a pint of infusion of senna to be given him.

October 2d. Consciousness and intelligence improving, though his speech s still occasionally incoherent. He made an exclamation to Prof. Dod, this afternoon, of the impropriety of which he seemed suddenly to catch the sense, when he remarked apologetically, "I did not intend to say that. I often express what I do not mean." Respiration, which has heretofore been laboured, is much improved. Temperature more equal, but below the healthy range. Face slightly flushed. Pulse sixty-two, in the recumbent position, but rises to 90, after walking across the room, which he *will* occasionally do. There is some appearance of granulations on the edges of the wound, but the bone is everywhere denuded, and commencing necrosis evident. Discharge abundant and excessively fetid.

The above note of his situation was made after my morning visit. At eleven o'clock he had a slight chill, which was followed by symptoms of fever. His pulse rose to 110, but was small and vibrating. The carotids throbbed violently; his face was flushed and bronzed. Temperature of the surface generally high. Mind wild and wandering.

Make cold applications to the head, and give him a pint of the common injection immediately.

Evening.—The injection brought away considerable feculent matter, and reduced his pulse, which continued small and compressible, to 92. He is partially comatose. Tongue covered with a thick white fur. Deglutition difficult, and his upper lip much swollen, and covered with an eruption of exceedingly small vesicles.

3*d—morning.* Stupor continues; contractility of the iris healthy. Respiration difficult; pulse eighty, and offers *rather* more resistance to the fingers than it has heretofore. Tongue dry and brown. Lips and teeth beset with sordes.

Evening. Articulation and deglutition suspended all day. An examination of the mouth and throat disclosed the following condition of their lining membrane. From near the roots of the upper incisor teeth, extending backward over the velum palati, uvula, lateral half arches, and fauces, as far down the pharynx as I could see, it was covered with a thick, closely adhering yellowish pellicle. After an unsuccessful attempt to remove i with the forceps and a mop, in which I did not detach more than woul have covered half a dollar, I applied the nitrate of silver to its whole surface, from as far down the pharynx as I could with safety reach, to it anterior termination behind the superior incisor teeth, and bathed the external throat with a liniment composed of croton oil two parts, and Granville' lotion one, which was repeated until a copious eruption of pustules wa brought out. I opened a vein this afternoon, but before he lost three oz of blood, approaching syncope came on, and I was obliged to tie up hi arm.

4th. Passed a restless night. Is delirious, and constantly striving t leave his bed, and escape from his chamber. Head, and superior parts o the body hot; extremities cold. The membranous exudation noticed yesterday, is arrested in its progress, and like the tongue and lips, is of a dar brown colour. Respiration and deglutition improved. Teeth covered wit sordes. The edges of the wound are spread over with a diphtheritic effusion precisely similar to that in the throat. Pulse 83, small and vibrating Let bladders of ice be kept on the head, flannels and hot bricks to the fee and legs, and bathe the throat and mouth every six hours with a stron solution of alum.

5th. Worse to-day; debility very great. Feces and urine are discharge involuntarily. Pulse 94, small and feeble. Deglutition difficult; voic inarticulate. Profuse discharge of fetid sanies from the wound, and it whole appearance unfavourable. Fungus larger, and another springin out by its side. No adhesion between the bones and the integuments What can be seen of the dura mater appears to be gangrenous. The flui of the vesicles on the upper lip has concreted into a dark-coloured scab which extends into, and fills the nostrils. Lip itself much swollen. Ha had several convulsions of the muscles of the face and neck. Pseudo-membrane of the mouth and throat is being detached.

6th. No recurrence of the convulsions since two o'clock this morning Consciousness returned. Makes known his natural wants. *Motor* hemiplegia of the right side. Pulse 98, soft, and more full; skin cool and soft Countenance and spirits good. Wound as yesterday.

7th. Consciousness perfect. Sensation of the paralytic side but little, i any, impaired. No improvement in his power to articulate. Fracture portions of the cranium all necrosed; in other respects, the wound is as las noted. Towards evening became more restless than he had been throug the day. Pulse 72.

8th. While dressing the wound this morning, there was an escape o fetid gas from between the dura mater and the cerebrum, accompanie with a gurgling sound, and the discharge of much pus from around th se of the fungus. Tongue dry, and thickly coated with a mahogany-loured crust. Other symptoms as yesterday.

9*th*. Slept through most of the night. Bowels have been moved sixteen mes to-day, of the necessity for which he was entirely conscious. The atter discharged dysenteric, being composed principally of mucus and lood. Injections of sago and laudanum arrested the disease. Put a liga- re round the fungus this morning.

10*th*. No return of dysenteric symptoms. Power of the will extends to e paralyzed leg to-day. He could move his arm yesterday by an exer- ise of volition. Other symptoms as last noted. Ligature came away this orning. Fungus but little reduced in size.

11*th*. Slept at intervals throughout the night. Fungus rather smaller. he dura mater very much thickened, and protruding through cranium, s seen surrounding the base of the tumour like the calyx of a flower. The nterior edge of the temporal muscle has projected some smooth, red, and rritable granulations, which extend to the base of the fungus. Discharge rofuse and fetid.

12*th*. The vacuity left by the piece of bone, which was removed by the aw, is occupied by a granulation, which, as there is nothing externally for t to attach itself to, is assuming an unhealthy appearance. On cutting way a small gangrenous piece of the dura mater from the posterior part f the fungus, there was an exit of pus from between them, to the amount f a teaspoonful.

13*th*. A fragment of bone loose, but not sufficiently so to admit of removal without the exertion of more force than would be proper to use. Diphtheritic lamen disappeared from the wound. Appetite keen. Allow him a diet of baked apples and boiled rice.

14*th*. More listless and disposed to sleep to-day. Skin and tongue dry. Pulse 60—65. Put a ligature round the base of the fungus this morning.

15*th*. Slept well last night. Countenance healthy and mind cheerful. Pulse, skin and tongue as yesterday. Some bleeding from the wound on removing the dressings this morning. Edges irritable. No granulation. All the fungus included in the ligature, came away without any diminution of its previous size, which is more than equaled by its growth in the last twenty-four hours. There had been no perceptible augmentation of its dimensions for several days, until this morning. Was the action of the ligature in any way promotive of this? Pulse 60.

16*th*. Texture of the fungus, fibrous and very firm. Bowels opened in the night. Other symptoms as last noted.

17*th*. Angle of the mouth elevated towards the wounded side. This was not permanent, and he could at any time restore it to its proper position by an act of the will. In all other respects his appearance and feelings are healthful.

The fungus, having sloughed off to a level with the skull, came away with the dressings this morning, and so rapid was its growth, that before they could be reapplied, it had risen a quarter of an inch. Its pulsations are, and have been, synchronous with those of the brain, which greatly exceed in frequency those of the arteries, especially under the influence of any emotion, when they become so rapid as hardly to admit of being counted. Pulse 70, and more full.

18*th.* More listless to-day. Removed two small fragments of bone which had become nearly detached from the fracture, and a small exfoliation from the external table of a fixed portion of the parietal. Bowels not moved since 2 A.M. on the 16th. Other symptoms as last stated. Let him have a dessertspoonful of castor-oil.

19*th.* Still listless. Oil has operated well. No increase in size of the fungus. The edges of the scalp show a tendency to unite with those of the temporal muscle, which they have not previously done.

20*th.* Has passed an uncomfortable night, having slept but little, and was extremely restless when awake. Consciousness perfect; eyes and countenance natural. Head free from pain and every uneasiness, even when rapidly rotated. Skin heated, and tongue dry and brown. Pulse 120, and weak. Wound discharging an abundant serous fluid. Fetor much lessened. Fungus greatly enlarged. Its upper portion has the appearance of the cineritious part of the brain, while the lower is much firmer, and fibrous. The dura mater much thickened, very vascular, and almost as firm as cartilage.

21*st.* Tongue not so dry as yesterday. Wound discharging profusely the kind of fluid then noted, not less than a pint having run off since last night.

22*d.* Respiration short and hurried. Pulse 130; skin very hot; no appetite. Fungus enlarged, measuring an inch and three-quarters in length, one in breadth, and one in height. Patient rapidly emaciating.

23*d.* Fungus increased in size, and composed of three distinct parts, two arising from the brain and one apparently from the dura mater, all of a dense fibrous structure,—more particularly the last. They adhere slightly to each other, and quickly coalesce after being separated. Serous discharge abundant.

25*th.* Skin dry, but not hotter than natural; mouth parched. Pulse 110, small and compressible.

26*th.* Symptoms, with the exception of a frequent desire to micturate, (often fruitless, and never satisfactory,) same as yesterday. His parents having taken rooms in the village about one hundred yards distant from those which he had occupied since he was wounded, he was removed to them this afternoon without any apparent inconvenience.

27*th.* Has passed the night in short and unrefreshing slumbers, frequently starting and moaning in his sleep. His eyes are glassy and unsteady. Pulse 120, small and vibrating. Skin very hot and dry. At ten o'clock this morning vomited a small quantity of fluid perfectly blue. During the afternoon and evening more comfortable.

28*th.* Vomited again this morning at ten o'clock, ejecting about half a pint of pure yellow bile. Fungus diminished to one-half its maximum size. Edges of the wound smooth and red. Countenance good. Pulse 100; skin and mouth dry.

29*th.* Has scarcely slept during the night. Countenance, however, pretty good. Pulse 100, distinct, and moderately full. Skin cooler than yesterday. Mouth and tongue parched. No appetite, and very restless.

On removing the dressings this morning, the fungus was no longer to be seen, but the bones, denuded and dead, with the opening in them unobstructed, came directly into view, permitting a more extensive survey of the interior of the skull than, perhaps, was ever before made upon living man. The extent of the cavity antero-posteriorly was estimated at four inches. Transversely the falx-cerebri was visible, and bounded the view in that direction. The outline of the apophysis of Ingratius was seen anteriorly, and that of the edge of the tentorium posteriorly. Pending from the bone, near the posterior margin of the cranial aperture, was a flap of the dura mater, hanging like a curtain into the cavity, and shutting off in a degree the prospect towards the occiput. This may have been the remnant of the more fibrous part of the fungus, as no portion of it was found in the dressings. The floor of this cavity was formed of a thin stratum sloping inward and downward toward the cerebral ganglia, from the lower edge of the aperture in the cranium at an angle of about forty-five deg. Some shreds of the dura mater, detached in part from the internal surface of the skull, were seen hanging into the cavity, as also a few vessels stretching across its walls in different directions, chiefly, however, along the falx.

His eyes are glassy and unsteady. His head is occasionally agitated by an involuntary rotary movement. The parotid gland, on the injured side, is very much swollen. Sensibility and consciousness perfect. No pulsation of the brain.

Several highly intelligent gentlemen were present at the dressing of the wound this morning, whose astonishment, when they first saw the interior of the skull, with so little of its natural contents remaining, could scarcely have been greater if the varied movements of the physical machinery of the mind, impelled by the mysterious power of thought, had have been presented to their view.

30*th.* Has slept very little. Motion of the head almost constant. Pulse 110, small and quick. Much nervous agitation and irregular muscular action. Debility great. Jactitation, floccitation, and toward evening low delirium. The cavity in the skull is filling up, the floor being now nearly horizontal; vascularity much increased.

31*st.* Had a sleepless night. Feces pass involuntarily. Other symptoms as yesterday. Within the cranial aperture, about an inch from its anterior margin, discovered an orifice large enough to admit the end of the finger, leading into the anterior lobe of the brain. He complained of the light this evening for the first time, and pushed it away when brought near his eyes. Has been annoyed by "hiccough." Gave him fifteen drops of M'Munn's elixir this morning, with the most tranquilizing effect.

November 1*st.* As I approached him this morning, he saluted me with a smile. Muscular agitation in a great measure subsided. Singultus continues in paroxysms of from five to ten minutes duration. Became delirious this afternoon.

2*d.* Recognizes no one. Countenance hippocratic. Respiration short and hurried; voice guttural. Muscular agitation of the whole of the left side, particularly of the arm, violent. The muscles of the *paralyzed* limbs were affected by a tremulous shudder. Their contractions were not sufficient to move the members to which they were attached. Lower jaw moves as in mastication. Skin hot, and purple. No discharge from the wound, which is of a leaden colour. Bladder not evacuated for the last twenty-eight hours. Introduced a catheter, and drew off rather more than half a pint of urine. He manifested great sensibility of the urethra during the introduction of the instrument.

As the day advanced, the muscular movements subsided; he moaned incessantly; his skin continues purple and *intensely hot* over the thorax; his pulse became scarcely perceptible; and at two o'clock, he ejected, by a sort of regurgitative effort, a mouthful of yellow fluid, threw back his head and expired.

The post-mortem examination was made by Dr. Blackwell, to whom I am entirely indebted for the account of the dissection of the brain, and the condition in which he found it; as well as for an abstract of the case, o which I have freely availed myself in the foregoing statement, wherever i is more full than my own notes.

3*d. Autopsy twenty-two hours after death.*—The inferior edge of th cranial aperture was situated at the point of intersection, between two line drawn, the one perpendicular to the external meatus auditorius, and th other horizontally backward, from the external angular process of the o frontis. Extending upward and backward, its entire length was about a inch and a half, and its width not quite an inch. By removing a circula piece of bone, in advance of this, for the purpose of inspecting the dur mater in situ, it was found to be detached as high up as the origin of th temporal muscle down to the base of the skull, and forward as far as th frontal bone. One part of it hung down into the cavity, very much thickened, and gangrenous.

"The upper half of the cranium being removed, nearly half a gill c sero-purulent fluid escaped through a rupture in the dura mater coverin the anterior lobe, which became flaccid and collapsed. A small quantity c purulent matter was also found beneath the dura mater on the under side of the medulla oblongata. At the surface of the brain, next to the cranial aperture, it was completely destroyed to the extent of two inches all around. The lower half of the middle lobe was also entirely destroyed, with the exception of a thin stratum at its base, not more than a quarter of an inch in thickness, meninges included, which was also diseased. Introducing the finger into the cavity and exploring it, it was found to extend the whole length of the lateral ventricle. Extending the dissection by removing the upper part of the hemisphere above the corpus callosum, two sinuses were discovered, leading from the main cavity. One of these extended into the anterior lobe, was about two inches in length, and half an inch in diameter. It was the orifice of this sinus observed before his death, and from it came the pus which escaped through the dura mater. The other sinus was situated in the posterior lobe, extending upward and backward very near to the surface, just above the torcular herophili, an inch and a half in length. In the bottom of this sinus were found two pieces of lead, very much flattened and indented together, about equal in size to one of the shot with which his gun was charged when he received from it the fatal wound. A spicula of bone, about the size of a mustard seed, was also found here. In the posterior lobe there was not more than a cubic inch of healthy medullary substance, most of it being entirely destroyed, and the rest converted into a semi-purulent amorphous mass. About one-third of the anterior lobe, and two-thirds of the middle were in the same condition. Examining the lateral ventricle, the corpus callosum, as far as the *raphé* on the injured side, was destroyed. The septum lucidum and anterior part of the fornix were also destroyed. The hippocampi were too much diseased to be distinguished. The upper half of the corpus striatum was very much softened; on scraping this off, however, the diverging fibres of the corpus pyramidale were beautifully displayed, spreading out through the gray substance of the ganglion, resembling the striated appearance of our common marine shells. With the exception of the commissura mollis, the thalamus was more healthy. Between the two thalami there was no connection. The vellum interpositum and choroid plexus of the lateral ventricles were destroyed. There existed, therefore, a communication between all the ventricles and the wound.

"The right hemisphere, with the exception of a convolution above the corpus callosum, (which was 'curdly' and friable, and those around its lower external surface, which were inseparably adherent,) was healthy. The cerebellum and those parts described on the base of the brain were all healthy except the corpora albicantia. Between the infundibulum and pons there was nothing to be found like a rounded body or an eminence. Such was the condition of the parts when dissected, which, owing to the softness of the brain when first removed from the skull, was not completed for several days, and during this time it was preserved in alcohol.

"To all who witnessed this case it is a matter of great astonishment that the patient should have lived so long preserving his mental and corporeal functions so little impaired. The right side was paralyzed only as regarded its motion, and that imperfectly. Its sensibility was very little if at all impaired. These phenomena would corroborate the conclusions that the origin of the locomotive influence is in the anterior columns of the cerebro-spinal axis, inasmuch as they were the parts chiefly injured, while sensibility resides in the posterior.

"How was the abolition of the power of speech to be explained? Was it owing to the diseased condition of the cornu-ammonis and temporal lobe, in which Foville locates the seat of this variety of muscular motion?

"In consequence of his entire inability to articulate and the paralysis of his right arm, it was impossible to ascertain the exact degree in which he retained his intellectual faculties. Signs were his only media of communication, and these, it must be confessed, were not always the most expressive in representing the ideas he wished to convey. From the eleventh day after the receipt of the wound, until the second or third before his death, he gave every indication of consciousness and reason. He recognized his friends and took pleasure in their society. Among those who watched and nursed him, he preferred the services of some to those of others. Failing on one or two occasions to make known his wants by such signs as he used, he attempted to write them with his left hand, but after several illegible efforts he gave up in despair. At another time a proposition was made to him in writing, *one* word in which he could not decipher, when pointing to it with his finger to have it explained, he expressed his approbation of the proposal, and gave it his ready assent.

"Prof. Dod once repeated a problem in mathematics to him, a branch o study for which he had no partiality; he shook his head in affected disgust and playfully expressed a strong detestation of the science. After his removal to his new lodgings, the above gentleman said, in the hearing of Mr B., that 'from his willingness to the change, he was afraid that the attention which himself and family had been able to give were not satisfactory to him.' He turned to the speaker, and presenting him his hand, a tear at the same time starting from his eye, protested in the most earnest manner against every such feeling, and with affectionate vehemence repelled the imputation. Such are a few of the many manifestations of mind presented by Mr. B. Sufficient, I think, to show that although his reasoning powers *may have been impaired*, they were far from having been destroyed."

Besides the alterations of structure in the different parts of the encephalon, observed by Dr. B., there was, at the time of its removal from th cranium, a whitish-coloured fluid between the tunica arachnoidea and pi mater on the anterior surface of the corpora pyramidalia, extending from th inferior edge of the pons varolii the whole length of the medulla oblongata which fluid was partially coagulated by the alcohol in which the brain was immersed previous to its dissection.

In consequence of the large amount of blood lost at the time of the accident and the first forty-eight hours subsequent thereto, the suspension of all nourishment but rice-water, and the profuse discharge from the wound and fungus, the development of active inflammation in the vessels of the brain did not take place, and, therefore, the vigorous use of those measures commonly had recourse to in injuries of this organ, were not demanded, and the treatment being entirely pro re natâ, resolved itself into the use of such means constitutionally and locally as were calculated to allay and remove irritation,—to sustain the powers of life without inordinately increasing their actions. In reference to the fungus, I may mention, however, that twice I attempted to "slice it off," and that my hand was arrested each time by the hemorrhage which followed the removal of the first portion. It is greatly to be regretted that the extension of the injury to the different parts of the encephalon cannot be determined in the order of its invasion of them, and the succession of the symptoms in their relation to this order, as the case of Mr. B. would then be one of the most instructive, as it now is one of the most extraordinary, which the annals of medicine record. On the seventh day from the occurrence of the accident, the secondary symptoms consequent to it were first manifested, and by supposing the irritation from the wound at this time to have just reached the hippocampi, the opinion of Foville will be thus far confirmed, for on the evening of that day articulation became embarrassed, was entirely suspended on the next, and never afterwards recovered. On the ninth, convulsive movements of the muscles of the face and neck occurred, and on the tenth, motor hemiplegia seized the patient, both of which are readily explained upon the supposition, that at this time the corpus striatum became involved. With speculations upon the possible, however, science will not be satisfied. Her stern demand is facts, and having given these, I leave each one to draw such conclusions from them as will be most satisfactory to himself.

Art. IV.—*Observations on the Use of the Sulphate of Quinine in Remittent and Intermittent Fevers, as they occur in Cleveland, Ohio.* By Geo. Mendenhall, M. D., of Cincinnati, Ohio.

It is unnecessary here to insist upon the fact that the proper application of the sulphate of quinine in remittent and intermittent fevers is a matter of great consequence. The subject has attracted, and is now attracting, the attention of the profession throughout our country; and although the reports appear to be somewhat discrepant, they may be reconciled by the circumstances which attend the administration of the article, differing in the various sections of our widely-extended territory.

While the directions for its exhibition in southern fevers may be entirely applicable to the disease as found in the south, they may not be appropriate to those of more northern latitudes. On the other hand, the rule of practice founded on northern observation may be fatal when applied to the southern fevers; so much are the condition of the system and disease modified by climate. It is only by being furnished with data from different portions and localities, widely distant from each other, and variable in regard to local conditions, that we can hope to arrive at correct conclusions.

So far as my own observation has extended, and from reliable reports, I think there can be no doubt but that different localities, and different seasons vary the condition of disease, in such a manner that it is necessary to vary our remedies to suit these particular changes, and that the proper use of the sulphate of quinine is not an exception to this rule in its applicability to remittent and intermittent fevers. The reports, therefore, of southern practitioners respecting its use in southern malarial fevers ought to be received with great caution, and with some qualification when we attempt to apply their treatment to cases occurring in more northern regions. Upon their authority the tendency of the profession at the present time is strongly inclined towards the adoption of their practice without regard to locality, latitude, or the epidemic constitution of the season. But little has been published in the north on the subject, and from this fact it is inferred that these southern precepts are of universal applicability, which, in my opinion, is a very serious error. From eight or nine years' experience in a northern malarial district, I do not hesitate to say that the directions for the use of quinine as adopted by most southern practitioners, and in some instances by the northern, on the authority of their southern brethren, are seldom proper or called for in northern fevers either in regard to the period of its use or in the quantity of the article administered. That there are cases in the south, and a vast majority perhaps of them too, which will admit of its early application, without much if any preparation, and may even demand it, and also in very large doses, I am not disposed to deny; yet this does not prove its universal adaptation to all cases of malarial fevers, and under all conditions.

For the purpose of illustrating these differences, I will attempt to describe the form of remittent and intermittent fevers, and their proper treatment, as they occurred in Cleveland, Ohio, and its neighbourhood, from the year 1835 to 1843, inclusive of the years named.

This place is situated on the southern shore of Lake Erie, at the northern termination of the Ohio canal, and at the mouth of the Ciugahoga river.

Without describing particularly its topography, I will merely state that the causes which are generally supposed to be productive of remittents and intermittents exist here to a considerable extent, and they are very common diseases, particularly in the months of July, August, September, and October. In addition to low stagnant marshes and a sluggish stream, the hills are being cut down in making streets, whereby large quantities of comparatively recent deposit are exposed, and which is one fruitful source of disease.

It is said that while the canal was being made in 1827 and 1828, a fever prevailed of unusual fatality, carrying off large numbers of the workmen and the old citizens of the place. Of the particular character of this fever I am uninformed, except that in fatal cases it seldom continued more than four or five days. Whether this was a form such as occurs in southern latitudes and could have been cured by quinine, I cannot, therefore, say.

I am not aware that the fevers of Cleveland differ in any respect from those which occur in the northern part of the State of Ohio generally and in the State of Michigan, except that, perhaps, the malarial influence may act with more power and concentration at some localities than it does at Cleveland.

Symptoms.—The attacks of autumnal fevers, as they occurred there, were generally ushered in by an irregular chilliness, often accompanied by heat of skin at the same time; pain in the head and loins; thirst; anorexia; an indescribable feeling of *malaise;* costiveness in most cases; often slight tenderness over the region of the liver; eyes mostly somewhat injected, with a yellowish tinge of the conjunctiva; skin often of a yellowish hue; and the urine scanty and high-coloured. These were the usual symptoms in the forming stage. On the following day they were sometimes followed by a distinct chill, fever, and sweating stage, without any violent or protracted symptoms of congestion; although during the hot stage there existed severe pain in the head and loins, and sometimes delirium. The fever sometimes passed off almost entirely after the sweating stage, but not always; occasionally there would remain a dry, furred tongue, headache until the following chill, either on the next day or the day succeeding. In other cases the fever continued with a more or less marked remission, without any distinct chills. Generally the exacerbations occurred in the afternoon and evening; they were not, however, always regular, sometimes occurring in the morning, and sometimes twice a day. The thirst was seldom absent before treatment, even when there was a diminution in the heat of the skin, and in the force and frequency of the pulse, although it might have been somewhat abated. This fact of the continued presence or occasional absence of thirst we considered always important in influencing us in the use of the sulphate of quinine, in all the different stages. During the first two or three days of this last or remittent form, its type might have been changed in many instances to the intermittent by venesection, (which was generally demanded by the local determinations to the head, liver, or mucous membranes,) and by the use of active mercurials, followed by saline cathartics. Frequently, for a few days the symptoms were such that it was impossible to determine which form would be developed, as there might exist irregular chills, fevers, and even the sweating stage; but with the dry tongue, thirst, headache, and other febrile symptoms continuing.

Here it was that the course of medication often determined the result, whether the intermittent, remittent, or continued forms would be developed.

The intermittent, when distinctly marked, could, almost without exception, be cured very easily by a proper course. Neither were the remittents often attended with a fatal result unless from some cause or other they were changed to the continued. I have occasionally seen cases of the remittent attended with a severe pain in the bowels or some other part, which assumed a regular periodicity, occurring at a particular hour every day. These cases would bear the use of quinine sooner than those where the periodicity was not so well marked. In the remittent form as the disease progressed, unless influenced by proper treatment, the local determinations became more evident. The fever, also, became more continued, or marked with a slighter remission, unless we succeeded in obtaining a more perfect remission, in which case the tongue was cleaner and more moist, the secretions from the bowels were improved, and the sulphate could generally be tolerated. Those cases that ran into a more continued form of fever were seldom, if ever, characterized by a distinct crisis. The disease went gradually on until it had acquired its height, and then receded in the same manner, when it terminated favourably so gradually that it would be impossible to say precisely when a change for the better did take place. The improvement might be first manifested by a change in some one function, while the rest of them remained diseased, which rendered it extremely uncertain whether there was any real change towards convalescence or not. It was not, therefore, until we found several of the functions resuming their healthy activity that we could confidently say a crisis had taken place in the disease. I do not recollect a single case which was marked by a clear and distinct crisis or critical discharge of any kind.

Treatment.—As the use of the sulphate of quinine in the treatment of these fevers was so intimately connected with the other means used, each of which had its appropriate application, I must be permitted briefly to detail the course we generally pursued.

The sulphate of quinine formed a very important item in their management, and could not be dispensed with; but in very few cases could it be relied upon as the only treatment.

Venesection.—In a majority of cases this was borne well, and, in fact, was often clearly demanded, but in some seasons more than in others. It generally produced an abatement of the feeling of fullness in the head and liver, as well as afforded some relief to the feeling of oppression which was felt throughout the system generally. After its employment emetics were better borne; cathartics operated more freely and affected the secretions more favourably. I am fully persuaded, also, that it was a powerful means of changing the remittent and doubtful forms of attack into the more favourable condition of intermittents. It hastened the period of remission and intermission, and of course sooner brought about the time when the sulphate could be used without risk of producing, or aggravating if they existed, those local inflammations which have always to be guarded against in treating our northern fevers. If these local inflammations had already commenced, it was one of our most powerful means in reducing them, without which the use of quinine would be extremely hazardous. The extent to which it was found proper to carry this remedy was to produce a decided impression, and to do this it was sometimes necessary to repeat it.

Local bleeding.—This was also found very beneficial in lessening the effects of, and removing local determinations. It appropriately followed the general use of blood-letting; and when, perhaps, in debilitated subjects, the general abstraction of blood was inadmissible, this form could always be used when any symptoms existed calling for its employment. Cups were in most cases preferable to leeches.

Emetics.—These were applicable frequently in the early stages of the attack, and could be used advantageously, but they were often omitted, and could be dispensed with in most, if not in all cases. I have not myself been in the habit of using them much, from a prejudice which I contracted against them from witnessing the unfortunate and fatal effects of a large dose of tartarized antimony, but I am not aware that I have been any less successful than other practitioners have been. I frequently used emetic substances in nauseating doses in combinations which will be spoken of under another head, and have thought that the effect upon the secretions was quite as well marked and as beneficial as if given in full and decisive doses.

The effect of long-continued nausea in reducing the force of the pulse, equalizing the circulation, determining to the surface, and acting upon the secretions, is a very powerful means of reducing disease, when properly adapted to the case. The use of tartarized antimony as a depressing agent is second only to the use of the lancet; and it is one of our most powerful auxiliaries in the treatment of a portion of the inflammatory diseases we are called on to manage.

Cathartics.—It appears to me to be difficult indeed, if not impossible, to succeed without the use of cathartics in this class of diseases, in some stage or other, in any climate, whether north or south. Dr. Porter, in noticing them in his very judicious and able report in reference to southern fevers, says that "they are always beneficial;" they were particularly so in these forms of which we are speaking, and in fact were indispensable to success. When constipation existed there was no substitute for them, and in fulfilling the indications of correcting the secretory action of the liver, and the removal of irritating secretions from the alimentary canal, a proper selection from this numerous class was always necessary. They also acted as depletant to the general system, equalized the circulation, and were useful in relieving and removing local congestions and inflammations. The form of their administration, which we often found useful, was the following prescription:—℞. Hydr. chlor. mit. gr. x; Tart. antim. gr. ss; Nitr. potassæ ʒss; div. in chart. iij. M.—One to be taken every third hour, commencing generally at six o'clock P. M. This should be followed by castor oil on the following morning sufficient to operate actively on the bowels. The effect of this was to produce, almost universally, dark-coloured stools, characterized as bilious; in fact, in many cases the discharges consisted of a large admixture of nearly pure bile. The evacuations from the liver, as well as the corrected state of the secretions from it, effected by the mercurial, very soon produced a change in the appearance of the conjunctiva and skin, with an amelioration of all the symptoms in most cases. When the inflammatory symptoms were not so high, it was proper to substitute for the nitrate of potash and tartar emetic, the Dover's powders. This last combination was frequently very proper, because it often had the effect of allaying the general irritability of the system and disposing to a quiet sleep with a gentle perspiration. In these combinations it will be perceived that by the manner which the mercurial was administered in divided portions, and allowed to remain in the stomach for ten or twelve hours, the alterant effect upon the secretions was more fully secured than if purged off immediately, by union with a more active cathartic. The diaphoretic effects of the other part of the prescription are also more certainly produced by the continued manner of its exhibition, and by being given during the usual period of rest; at which time it is probable that its influence will be exerted more favourably on the skin. This form of administering mercurial cathartics I prefer to giving them simply with the view of the immediate cathartic effect. I think when we administer the more active cathartics a few hours after this course, that the operation is much more free, and the effect on the secretions more satisfactory than when given together. But free active purging was indispensable, and when properly applied seldom or never did harm. Where the bowels were irritable, an anodyne was proper; it first lessened the irritability of the mucous membrane, and coincided in its effects with the cathartic in producing a more healthy secretion from it. Cathartics were always indispensable in remittents, and primary attacks of intermittents, in preparing the system for the use of the sulphate of quinine, at least to permit us to get the full and entire benefit of it, both as to its immediate safety, and its permanent beneficial effects on the system. This part of our subject will be alluded to again when we speak of the particular application of quinine, which will be done more at length in the latter part of this paper. This cathartic, alterant and diaphoretic course was, as a general rule, continued for two or three days, and in fact was found necessary before the secretions were sufficiently restored, and the local determinations removed, so as to permit the use of this invaluable remedy, after which they were occasionally called for; but a repetition of the mercurial was seldom necessary. When it was, the blue mass would answer all the purposes we wished, and was properly used with the quinine when indicated. In the use of mercurials it was always proper to avoid ptyalism, although a very slight action on the gums appeared sometimes to be useful in effecting a favourable change in the disease. I am, however, strongly inclined to the belief that its slight action on the gums is merely an indication that the system has responded to the action of the medicine, or that a general impression has been made by it upon the secretions, and is not in itself of any importance in a curative point of view.

In the very able essay on remittent fever published in this Journal for April, 1842, by Dr. Stewardson, it is stated that he generally relied upon the blue mass in rather small doses as a mercurial in the fevers which he treated in the Pennsylvania Hospital. It may have been quite sufficient in these cases, but I think the effects of calomel in medium doses, as a general rule, are to be preferred. Some of his cases had taken calomel, however, previously to their admission into the hospital, and in these there was less need for its use.

Diaphoretics were almost always necessary in placing the system in a proper condition to bear the employment of quinine; and as we have before stated in speaking of cathartics, they were appropriately combined with them in the early part of the treatment. It was also often necessary to continue them after we had used cathartics freely, when the tongue remained dry, and the skin hot, with thirst, pain in the head, and full or quick pulse. In selecting a diaphoretic it was necessary to be governed by the condition in each individual case, whether we used antimonials, ipecac., the saline diaphoretics, or the sweet spirits of nitre. When these were continued until the tongue became moist, and showed a commencement of cleaning, we could use quinine profitably, but not until then.

The appropriate use of *alterants* was often necessary after we had used them in conjunction with cathartics, and in these cases they were combined with diaphoretics.

Revulsives.—They were often necessary when there were local determinations or pain in any particular part of the body. Cupping, blisters and sinapisms were generally used.

Opium, in its various forms, was often useful in allaying irritability of the bowels when it existed, and in preventing the calomel from passing off, before it had time to act upon the secretions. It also favoured the action of diaphoretics, allayed the irritability of the system, and promoted natural rest, unless, perhaps, in some few cases, where from constitutional peculiarity, or the particular condition of the brain, it might have had a different effect. It always operated better after the employment of the lancet, in cases admitting of depletion. Very frequently this remedy was found useful conjoined with quinine; and sometimes quinine could be given with Dover's powders or sulphate of morphia advantageously when the propriety of its use, without this combination, was extremely doubtful.

Diet, drinks, &c.—In the remittent form there was very little disposition to take nourishment of any kind before convalescence took place, after which mild farinaceous articles were found most proper until the lapse of a few days, when the lighter kinds of animal food might be used at first, and succeeded by those of a more stimulating description. The premature use of animal food was very apt to produce a return of fever and its consequences; and sometimes the relapse would be very tedious, resulting in a continued form of fever. In the intermittent there was seldom any disposition to eat in primary attacks, but occasionally a case of some standing occurred where the appetite was voracious between the paroxysms. The drinks proper were the mild mucilaginous preparations, such as barley-water, rice-water, slippery elm-water; and, in some cases, warm thin gruel would tend to produce an action of the skin that was beneficial. The acidulated drinks were also very grateful to the patients in allaying thirst and fever; of these cremor tartar dissolved in water, with or without sweetening, lemonade, tamarind water, &c., were used. Acidulated drinks should, however, always be avoided while patients are taking calomel or any mercurial, as they are very apt to cause salivation. I have known profuse and severe salivation produced merely by taking castor oil in a little vinegar and water, a few hours after taking calomel. Of all drinks, cold water, and even iced water appeared to be the most grateful, and I did not hesitate to allow it in small quantities, (one swallow at a time,) often repeated, say every ten minutes, while I was using mercurials. When the thirst was very great and this frequent swallowing of small portions did not allay it, I would permit the patients to take cold water into their mouths, retain it for a short time and then eject it. In this way much could be done in allaying thirst. So far as I have noticed the effect of cold water in producing ptyalism while taking mercury, depends upon the use of large draughts of it, while it may be taken in small portions, as above, without much if any danger. At any rate I have been in the habit of allowing it in this manner, and I do not now recollect a single case of ptyalism from its use.

Quinine.—I will premise the remarks I have to make on the use of this remedy by stating that the fevers of this region are mostly of an intermittent and remittent character, with some cases of the continued type, and they are often changed from one of these to another. These different forms exist also from the distinctly marked intermittent to the continued, in such gradation that at the connecting point it is impossible to say certainly to which of them it belongs; this is the case particularly for the first four or five days. As before stated, the form which is ultimately developed very often depends upon the treatment pursued. In the employment of quinine great care was necessary in regard to the time of its commencement, and in the preparation of the system for it, and it was a nice point to determine when it could be used with benefit.

As a general rule a depletory and cathartic course was necessary. These, with the other means which have been mentioned, had to be continued until a decided remission or intermission in the febrile action should take place, unless the system became too much reduced to bear them further. When the periodicity was well marked and the tongue began to clean, quinine could be borne, and almost invariably with advantage. The quantity which we have been in the habit of giving during an intermission or distinct remission was from ten to fifteen grains, dividing it into about five equal portions, and watching the effects of each dose (which were given about two hours apart,) until after the administration of the first two or three. When perspiration followed its use there could be no question of the propriety of its exhibition, and the result was then in all cases satisfactory. On the other hand, when the skin became drier with increased heat, increase of thirst, cephalalgia and delirium, we did not dare to proceed with it. Occasionally it could with great certainty be predicted whether the results of its employment would be favourable or unfavourable; but, as a general rule, if we were unable to see the patient after the remedy was commenced, it was necessary to leave provisional directions in regard to its continuance. If the quinine was borne, it was seldom necessary to repeat it on another day in intermittents, as it scarcely ever failed in arresting the paroxysm. If it did not, the febrile stage of the paroxysm generally ran higher; but the next could be easily interrupted by a repetition of the same course with almost absolute certainty, and even without a repetition of the remedy the paroxysm would seldom return. In remittents we had to proceed with greater caution, the effects had to be more closely watched, and when the remedy was borne, a longer use of it was necessary, but generally in smaller doses. Our experience in cutting short remittents was not near so satisfactory as it was in intermittents.

Patients are generally very anxious to have the paroxysms broken up, and it is therefore desirable to commence the use of quinine as early as possible. When doubt existed as to the propriety of using it, it might often be given combined with some diaphoretic; and of these the sweet spirits of nitre is one of the best, if not the very best. I always use it unless there is the most perfect certainty that quinine will be tolerated without the unpleasant symptoms spoken of. I was first led to its use by the recommendation of Professor Chapman, in his lectures ten or eleven years ago, and I have been highly gratified with the result. I am confident that I have, by conjoining it with quinine, broken up cases of chills and fevers, in feeble and debilitated patients particularly, where the febrile stage ran on without any great abatement until the commencement of the succeeding chill that must have succumbed to the effects of the repeated paroxysms. But in these cases the preparatory treatment had been instituted, the fever was moderated, the tongue was somewhat cleaned, the secretions were generally more or less restored, and the only indication remaining to be fulfilled was the interruption of the debilitating paroxysms. It was these paroxysms which were wearing the patient out, and not the local determinations, for they were removed. This combination of a diaphoretic with quinine often has the happiest effects; it appears to determine in a great measure the excitant effects of the quinine to the secretory action of the skin, and what under other circumstances might have produced dryness and heat of the surface results in a profuse perspiration like the sweating stage of an intermittent. Here, instead of coinciding in its effects with the disease, a crisis is forced upon it, and the train of morbid associations is broken up.

The dose which we have mentioned never disappointed us in our expectations of its effects when it could be tolerated, and we therefore considered that its employment in larger quantities was at least unnecessary if not injurious.

When it was used before the system was prepared for it, the danger consisted in converting an intermittent into a remittent or continued fever and in the case of remittents there was great liability of their being converted into the continued form. In such cases we had inflammatory determinations to the brain, and other local inflammations. The fever thus converted into the continued form was with great difficulty controlled by medicines; the local determinations were developed or increased; the patient would not generally bear the use of the lancet, and our hands were in a great measure tied. I am confident that I have seen cases conducted to a fatal termination by the too early use of quinine, which in all probability might have recovered by the use of other means. In that region we seldom or never had cases of the sudden and alarming character which we have reports of from the south; few or none ever died in the paroxysm, but when death did take place it was nearly always from a continuance of the fever, and from the local inflammations that were developed during the progress of the disease and unless there was *well-marked* periodicity, the use of the sulphate of quinine generally did harm.

The reports of southern practitioners are opposed to this course of treatment and these views, which they characterize as "behind the age." They claim to be correct, which doubtless they are when their treatment is applied to southern fevers, or even to fevers more northern, when they are characterized by the peculiarities of those fevers, instances of which are described by my friend, Dr. Parry, of Indianapolis, in the July number of this Journal for the year 1843.

It might be an important inquiry to ascertain whether even these forms might not be cured with smaller portions of the medicine; but it is an in quiry I cannot solve. Medicines should be administered with a view to a particular object, to fulfil an indication or indications,—to produce a decided effect,—and we should use them in such doses as will accomplish this; but, when this is done, we ought not to go beyond it, or perhaps we may produce disease by our therapeutic remedies worse than the one we are trying to cure. This error has already been committed in the excessive doses of the great Samson of the materia medica, calomel, recommended by our southern brethren. Their confidence in it was not much if any less than it now is in sulphate of quinine, and if I am not greatly mistaken, those practitioners of the north who adopted their practice had good cause to repent it. It is to warn them against this error in the indiscriminate use of the present very valuable remedy, sulphate of quinine, that I would insist here.

It is, however, principally to the applicability of their treatment to the fevers of the north, as they generally occur, that I am opposed. Here the system is not depressed, the diathesis is inflammatory, and the continued type of fever is much more apt to be excited. There, there is a great depression of the nervous influence, the periodicity of the disease is strongly marked, and the local complications are such as would be excited by great prostration of the system. This was also the case with the fever described by Dr. Parry, but these are far from being a true type of the majority of the northern fevers. They are confined to particular localities where the causes which produce them operate with peculiar violence, and exhaust the nervous energy with great rapidity.

The *excitant* and *anti-periodic* effects of quinine render it peculiarly applicable to the condition of system existing in these southern malarial fevers, and also in fever where similar symptoms are exhibited. In them the system is overwhelmed by sudden disease, and it must be immediately counteracted, or death will ensue in the paroxysm. The concatenation of diseased actions has not yet taken place; it is, therefore, to this sudden prostration and oppression that our remedies must be directed, and fortunately we have that remedy in the sulphate of quinine. As we have endeavoured to show in the preceding part of this paper, the fevers of the district we have endeavoured briefly to describe are of a different kind. The attacks are more gradual, and present a forming stage, in which the complications soon occur, and require at once the main artillery of our treatment. A partial acknowledgment by some of the southern army practitioners of the views we have here expressed, is made by their admission in regard to northern recruits, who, they say, will not bear quinine well in their first attacks of fever in the south; and this position attains still more strongly when they are attacked and remain in the north, where the system has not undergone, in any degree, the effects of southern exposure and influences.

In regard to the propriety of the use of quinine in northern remittents and intermittents, under proper restrictions, there can be no doubt; in short, it would be impossible to treat them successfully without it. It is the great *anti-periodic* remedy of the materia medica, not only applicable to remittent and intermittent fevers, but to all cases, under proper regulations, where there is periodicity. But the proper use of mercurials is generally necessary to place the system in a situation to get its most beneficial effects. They go hand in hand, and he who would strike either from our list of remedies, inflicts upon us an injury that cannot be repaired by the substitution of any others in the whole catalogue.

When quinine was given prior to the correction of the secretions, its effects appeared to coincide with the tendencies of the disease, while if the system was put in order for its use, it counteracted the train of morbid associations. To my own experience, and that of most northern practitioners, I am happy to add that of Professor Kirtland, of the Cleveland Medical College, who has had about twenty-five years' experience in the treatment of these fevers; and it is also known that he is a close observer of the effects of remedies. In speaking of the fevers of northern Ohio, he says, "in regard to the coinciding tendencies of bark and its preparations, in malarious disorders, if used before the morbid action in the hepatic system has been changed, and a proper condition of the whole system established, they are too evident to admit of a doubt."

In this Journal for October, 1841, there is a paper by Professor Flint, of Buffalo, in which he speaks of the use of quinine in large doses in intermittent fever. From the fact that he, as a northern physician, highly extols the use of the remedy in large doses, without much, if any preparation, it might perhaps appear to be judicious practice in other than southern intermittents. But there are circumstances in regard to the cases treated by him, which, when taken into account, materially modify our conclusions when we attempt to apply his treatment to general practice. He says that "the majority of cases of intermitting fever which occur in this city" (Buffalo) "are contracted in other localities: that the quantity of malaria seems to be insufficient to induce an attack, excepting in those peculiarly predisposed, or in conjunction with other concomitant circumstances. Not having resided in any locality where the disease is endemic to a greater extent than here, I cannot speak of the success of remedial measures, when the patient is exposed to the continued concentrated action of the morbific principle."

The cases, therefore, which he treated in Buffalo were of foreign origin, being mostly recruits in the army from Michigan and the northern parts of Ohio, where they contracted the disease. I understand him to use the sulphate as *the* remedy to cure intermittents, without any preparatory treatment, and prefer it in this way both for the interruption of the paroxysms and its permanent curative effects. Now it will be understood that nearly or quite all the cases which he treated so successfully with large doses o quinine without preparation, contracted the disease at some other place, and that in their removal to Buffalo they were removed away from the "continued, concentrated action of malaria." In these cases, then, one curative means was complied with, which of itself is often sufficient to accomplish a cure, viz., a removal from the cause of the disease. As the patients took the disease at some other place, a considerable time necessarily elapsed from the first attack, before application was made to him; or else it was a relapse from a former attack brought on by fatigue or some indiscretions, which are very common among soldiers. If it was the first attack, then time was given them in traveling to Buffalo, to avail themselves of those preparatory means which we have recommended, and which are so well understood in these districts, that they are very often used without application to a physician; and no doubt but that in ninety-nine cases in a hundred, resort was had to them in these cases, whether in the army or out of it, and if so, this preparatory treatment was nevertheless resorted to, although not advised by a physician. The system, then, in these cases, was prepared, and the quinine acted favourably. His large doses may or may not have done harm, but they were at least, I conceive, unnecessary, as I have repeatedly seen the effects of it quite as favourable in less than one-half the quantities, and that in malarial districts, and under its concentrated influence. The probabilities are that, in the majority of his cases, they were relapses from intermittents previously had, either the same season, or perhaps during a previous year. In all cases of intermittents there is an intermittent diathesis or disposition to periodical attacks set up in the system, which continues in some cases for years, and is liable to be called into play from very slight causes. This applies not only to the development of a relapse of intermittent fever, but other diseases may attack the system and observe this law of periodicity, such as neuralgia, &c. &c. Under these circumstances periodical attacks are easily induced, and without that derangement of the secretions and local determinations which almost invariably attend primary attacks of intermittents.

Persons familiar with districts where intermittents originate, will recognize the frequency of this kind of cases at once. A dose or two of quinine will break up the paroxysm, and unless the secretions are unusually deranged, or there is some inflamed or enlarged organ, little or no cathartic medicine is called for. The liability to relapses is much diminished also by a removal from the district where the poison is generated. Therefore let the paroxysms be interrupted in whatever manner they may, there is much less liability to a recurrence of the disease, unless from the most manifest imprudence. This I believe is the true explanation of the success of the treatment as adopted by Dr. Flint, in a region as far north and situated as Buffalo. Dr. Flint in his paper says, "we are to be guided by the considerations which will arise from the following inquiry:—Will the excitant properties of the tonic," as he calls it, "tend more to exaggerate the accompanying disease than the series of morbid actions which constitute the paroxysms of fever?" His answer is in the negative in nearly all cases. I must here differ from him in the general rule in northern fevers; although I admit that perhaps cases may happen occasionally where it would be otherwise, but these can generally be distinguished by the nature and violence of the paroxysms. In most cases of northern primary attacks the local determinations and fever precede even the first regular paroxysm, to a considerable extent; and the condition which is opposed to the immediate use of quinine occurs before the paroxysms are developed at least with regularity. His favourable experience can very easily be explained by considering the kind of patients which he treated and the circumstances attending them. Of one thing I am quite certain, that his experience is opposed to that of almost or quite the entire mass of the profession practicing in northern districts, where the disease is generated. I have myself often seen the symptoms previously mentioned, supervene on its use by being ventured upon at too early a period, or prior to a proper preparation of the system for it. I know of no disease upon which the effects of proper remedies are so certain and satisfactory as in intermittent fever. The effect of every mercurial cathartic in the beginning of the disease is clearly visible in the improved appearance and removal of the yellowness of the eye and skin, in the improvement of the secretions; in the equalization of the circulation; in the cleaning of the tongue; and in the general improved appearance of the patient. At this period quinine comes in, raises the drooping energies of the system, puts a stop to the paroxysm, and the patient improves rapidly from that moment. Here is no room for skepticism in regard to the action of remedies; the effects of every dose are apparent, and take place with that certainty that you can predict beforehand what will be the result, and assure your patient of it. I would not dispense with either mercurials or quinine in these diseases; take away either of them and you are crippled in your curative process; and use either of them out of their proper adaptation and you may do much harm. They are not specifics, either of them, in any particular disease, but combine them properly in the treatment of malarial fevers, and you can almost with certainty cure them.

In preventing a recurrence of attacks of intermittents quinine and bark are often useful. For this purpose I generally use the tincture of cinchona combined with that of gentian and serpentaria, in which is put sufficient aloes or rhubarb to keep the bowels in a free, soluble condition.

In some cases I have used the quinine with small portions of blue mass and aloes or rhubarb for the same purpose: these to be taken in sufficient quantities to keep the bowels quite open, but not so as to purge actively. This will generally prevent subsequent attacks, unless there is some very great dereliction from a proper course of living and exercise by the patient.

ART. V.—*Some Observations on the Effects of Sulphate of Quinine on the Pulse.* By GEORGE MENDENHALL, M.D., of Cincinnati, Ohio.

G. M., ætat. 31. Dec. 20th, 1845, 4 o'clock P.M. Thermometer 56° Fahrenheit. Pulse 72 lying, 77 sitting, 96 standing: took two grains of sulphate of quinine. 4½ o'clock, half hour after taking it, pulse 74 lying, 80 sitting, 100 standing. 5 o'clock, pulse 67 lying, 79 sitting, 95 standing.

Dec. 23d, 3½ o'clock, two hours after a hearty dinner, thermometer at 60°. Pulse 72 lying, 77 sitting, 92 standing: took 5 grains. 4 o'clock, half hour after, pulse 76 lying, 83 sitting, 101 standing. 4½ o'clock, pulse 75 lying, 82 sitting, 95 standing. 5 o'clock, pulse 70 lying, 77 sitting, 86 standing. 6 o'clock, pulse 70 lying, 76 sitting, 87 standing.

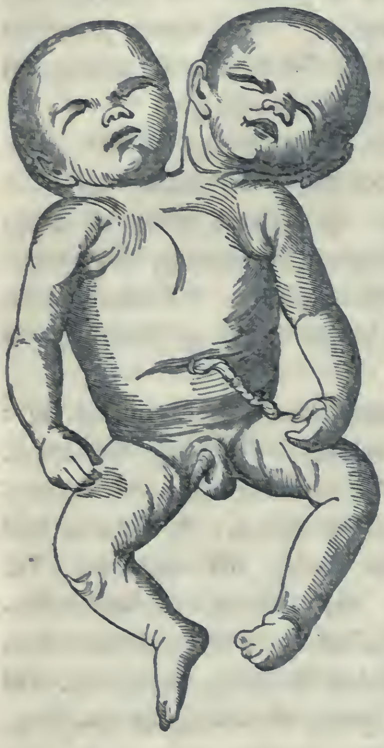
Dec. 29th, 1½ o'clock, half hour after dinner, thermometer at 60°, pulse 71 lying, 77 sitting, 98 standing: took 10 grains. 2 o'clock, half hour after, pulse 78 lying, 88 sitting, 103 standing. 2½ o'clock, pulse 71 lying, 80 sitting, 101 standing. 3 o'clock, pulse 68 lying, 80 sitting, 100 standing. 3½ o'clock, pulse 66 lying, 78 sitting, 98 standing. 4 o'clock, pulse 66 lying, 79 sitting, 98 standing. 4½ o'clock, pulse 66 lying, 79 sitting, 98 standing.

January 2d, 1846. 2½ o'clock, 1½ hours after dinner, thermometer 60°: took 20 grains of quinine; pulse then before taking it 72 lying, 77 sitting, 100 standing; 10 minutes after, 82 sitting, 15 minutes after 84 sitting; 20 minutes after, 85 sitting; 25 minutes after, 86 sitting. 3 o'clock, half hour after, or 30 minutes, pulse 77 lying, 85 sitting, 107 standing. 3¼ o'clock, or 45 minutes after, pulse 80 sitting. 3½ o'clock, one hour after, pulse 76 lying, 80 sitting, 102 standing. 3¾ o'clock, or 75 minutes after, pulse 80 sitting. 4 o'clock, 1½ hours after, pulse 75 lying, 80 sitting, 100 standing. 5 o'clock, 2½ hours after, pulse 75 lying, 80 sitting, 98 standing. 6 o'clock, pulse 80 sitting.

In all cases the pulse was increased in fullness and hardness, even when it decreased in frequency. When ten grains, and also twenty grains were taken, the ringing in the ears was very great, with some considerable deafness for several hours. Also a general feeling of the body, such as would be excited by riding on a rail-road car.

ART. VI.—*Case of Double-Headed Monster,—delivery without Mutilation.* By M. D. G. PFEIFFER, M. D., of New Oxford, Adams Co., Penna. With introductory remarks by C. D. Meigs, M. D., Prof. Midwifery, &c., in Jefferson Med. College, Philada. [With a wood cut.]

SIR.—I beg leave to send you a paper handed to me lately by its author, Dr. Pfeiffer, of New Oxford, Adams Co., Penna. Having brought to this city a fœtal monster, which he describes in his communication, and of which the accompanying figure is a good representation, I procured a portrait of it to be made by John Neagle, Esq., from which the present figure is engraved.



Such a specimen of monstrous development, were it properly dissected, would be highly interesting, as affording support for an argument against the theories of such formations in the works on Transcendental Anatomy;—but undissected, it presents little of interest beyond that which is connected with the inquiry as to how such a creature could be born without mutilation, seeing that two large heads are attached to a single trunk, without any division of the trunk.

To any person at all familiar with the phenomena of labour, I presume it would be apparent that such an one as this presents the very anomalous difficulty of a shoulder presentation, in which the common "indication" of *turning, to deliver by the feet*, could by no means be adopted, or carried into effectual operation, since the shoulder presentation could not exist until after the delivery of the first head, after which the shoulder presentation would inevitably be met with. Now, in order to *turn* and deliver by the feet, it is necessary that the shoulder should recede or rise upwards as the feet and breech descend, which could not happen in this case, because the shoulder would be tied to the superior strait, or within it by the head already born, which could not re-enter the genitalia in order to allow the shoulder to retreat from the strait; while, on the other hand, the second head could not engage in a pelvic strait already filled up with the shoulder.

In such a predicament it must be obvious that the indication would be to promote or to compel the mechanism denominated "the evolution of the fœtus," which consists not in *Turning*, in its true acceptation, but in the descent of successive portions of the thorax, abdomen, and pelvis, with their successive extrication in the order named, until the pelvis of the child being born, and the thighs, and legs, and feet afterwards in succession set at liberty, nothing remains but to deliver the last shoulder and the second head, which completes the delivery by the process usually called, as before said, the *spontaneous evolution of the fœtus.*

You will find by Dr. P.'s letter that it was in this manner he effected the discharge of his duty in the case, and he deserves the credit of having promptly seized and effected the indication of the cure.

It is worthy of remark that this particular case of double-headed monster, the *monstre acomplexe* of Serres, is rendered uncommonly interesting in an obstetric point of view by the fact that both heads spring from shoulders common to both of them, which rendered the labour more difficult and hazardous, as involving the sole hope of delivery by either evolution or decapitation. In the celebrated case of Rita Christina, who had four arms and a double thorax, the birth must have been much more facile, though it was, in all probability, effected by evolution, inasmuch as the evolution would not be difficult after the birth of Rita's head, shoulders, and arms.

If you have no objection, I will offer you the remark that this is not in fact a child with two heads, as might be readily conceived by inspection of the engraving, but two children, each of which has lost a leg, half of its body, one testis, half its rectum and bladder, colon, cæcum and ileum, the right child having added its halves to combine with the left halves of its brother. A dissection alone would show whether there be two stomachs, or two half stomachs united into one; two hearts, or one heart, of which the right auricle and ventricle belong to the right child, and the systemic auricle and ventricle to the left child. The specimen is also rare on account of this, namely: in these monstrosities it usually happens that the union or combination of the two children takes place from the liver upwards, or from the liver downwards, making what M. Serres calls *monstre complexe* in the former, and *monstre acomplexe* in the latter case. This specimen, it is true, is a *monstre acomplexe*, although from the fact that the union extends so very high it almost approaches to the state of the "*complexe*" monster of that distinguished philosopher and medical savant.

You are well aware that in the embryonal state, at its earliest phasis, the mammiferous, as well as the other classes, consists of two symmetrical halves, which, by their equal and equable development, result in the production of the individual. It is true, probably, that in all examples of the fusion of two embryos, the mutual penetration and loss is governed by either the umbilical vein, or the umbilical arteries, and that when the mutual penetration affects the head and thorax, we shall always find the union to extend in strictness not below the region of the liver, giving rise to two children, each with half a head united, by mutual penetration and loss, into a single perfect head and trunk, but each one retaining its own abdomen, pelvis and legs; or, vice versa, there will be, if the penetration occur from and below the region of the liver, only two legs, one pelvis, one abdomen, with two thoraces, four arms and two heads. I make these remarks in order to attract your attention to the rarely great extent of the mutual penetration and loss in Dr. Pfeiffer's fœtuses, and to suggest that had it gone on to the extent of combining the two necks and both heads, we should have had a single fœtus composed of the two symmetrical halves of two distinct individuals. One having lost its left and the other its right symmetrical half, or having exchanged it for the symmetrical half of its brother. Had these children of Dr. P.'s been male and female, say the left one female and the right one male, they would undoubtedly have exhibited the hitherto unknown spectacle of a true *Hermaphrodites and Salmacis*, or a human hermaphrodite.

The germinal membrane of the ovum is probably, when the germinative act has begun, of an oval or elliptical shape, as it is in the Aves, and it is very curious to observe that one extremity of this ellipse, after the first longitudinal incurvation takes place, exhibits the first traces of the brain, while the opposite pole presents the earliest traces of the pelvic or caudal extremity of the new creature. But this elliptical germinal membrane or blasto-derm is unquestionably composed of two symmetrical halves, united in their mesial line, and afterwards destined, by their lateral incurvation towards the vegetative or inferior surface, to include within their future cavities the organs whose rudiments first begin to show themselves upon the surface while still perhaps nearly plane. This sort of polarity, if I may so express it, of the blasto-derm, appears to be a fixed principle of the development-power of the said blasto-derm, since all the powers of vital chemistry are incapable of causing the development of a pelvis at the head pole, or of a head at the other. No leg or foot could possibly be protruded from the place appertaining to the arm, nor an arm from the place of the thighs. The heart must exist in the supernal, and the bladder and the reproductive organs in the inferior region; so there is reason in fact to assign a species of polarity to the development power of the germinal membrane or mass. If this idea be well founded, then it must be equally true, we have a right to infer it, that the germinal membrane will fulfil its law, and that law cannot be the subject of mere accident. But if it be obedient to a fixed law of development, where shall we look for support of the notion, not a little current, that the germ is male and female, and that the embryonal mass, nay, the very embryo itself is, up to a certain stage of its development, male and female; or I should prefer to say non-sexual, its elements taking on the movements that determine the male development, or those that determine the female development, as the case may be, but never producing the organs of a male in combination in the same fœtus with those of the female sexual parts! so that we have no likelihood of seeing a sincere case of hermaphrodism.

Let me repeat that Dr. Pfeiffer's monster is united so high up that it is almost wonderful that the combination did not extend to the necks and heads; had it done so, we should have had two brothers united in the same delivery, each bringing half his encephalon, spinal cord, thoracic and abdominal viscera, as well as his organs of sense and motion: now, if the germs are male and female in the acini of the ovary, then the mutual penetration of a male and female germ might result in the evolution of a creature male and female, or a monœcious human being. If a hermaphrodite should be proved to have been born, it ought to be considered as proof that the original germs are male or female.

I am, sir, your faithful servant,

CH. D. MEIGS, M. D.

Feb. 15*th*, 1846.

Dr. I. Hays.

Case.—*August* 21*st*, 1844, 5 o'clock, A. M.—Mr. L. called on me to see his lady, in labour with her eleventh child.

She is in her 43d year of age; 4 feet 9 or 10 inches high; of fair complexion; gracil in bone and muscle; enjoys general good health; has given birth to ten children, all now living, of which the oldest is in his 20th year, the youngest in the 19th month, and all (4 sons and 6 daughters), remarkable for symmetry and beauty in form and features.

Her pelvis may be called perfectly normal in every diameter, and the coccyx is highly movable; so that her tenth delivery, and, according to her account, every former one, except the first, terminated naturally in from three to four hours after the first sensation of labour pains.

I had seen Mrs. L. the first time, immediately after the birth of her eighth child, on account of highly-inflamed hemorrhoidal tumours, protruded and strangulated. A proper prophylactic regimen and treatment have prevented the recurrence of any inconvenience arising from the still existing status hemorrhoidalis, in her subsequent deliveries. At her ninth delivery, I had to use the forceps to correct an oblique position of the otherwise normal head of the child.

A few minutes past 6, I found Mrs. L. as well as usual; the excreting organs in a proper state, and the whole body healthy; the contractions of the uterus, which had commenced about two hours before, were now repeated in from ten to twelve minutes, gradually, but quietly increasing in vigour and duration; but the still shorter intermissions perfectly painless. Mrs. L. mentioned that she had felt for the last two months more heavy, and was easier fatigued, than on former similar occasions; also, that the liquor amnii had commenced passing two days ago, she being engaged in washing, and that it had continued to do so till last evening, but that she had not had any sensation of pain.

On exploration, I found the genitalia dryer than usual. The head of the child was felt in the oblique diameter of the superior strait, presenting in the first regular head presentation of Baudelocque, viz., the posterior fontanelle high in the neighbourhood of the left obturator foramen; the sagittal suture tending towards the right sacro-iliac junction, while the large fontanelle stood too high to be felt. The os tincæ was fully dilated; the presenting bones of the cranium sufficiently movable, and the size of the head seemed not to exceed the medium.

About fifteen minutes had elapsed, when I observed by the expression and deepening colour of the face of the patient, the approaching pains, and proceeded to a second exploration, when my hand, at the distance of at least an inch from the external organs, was met by a small stream of warm fluid, projected as if it came from a syringe. Immediately looking up to the face of my patient, I saw it of a deep red colour, such as but rarely occurs in severe labour of first births; her teeth clenched, and her eyes glassy as if they were about to start from their sockets. My warning "not to press so," was met by the protestation that "she could not help it;" her hands she held clenched, and her feet pressed against the footboard of the bed. But instead of the expected rapid descent of the head, with danger of laceration of the perineum, my exploring right hand found the head exactly where it had been first, only, (what E. V. Siebold says he judges, for good reasons, to be impossible, until he had seen it,) a perfect *ear presentation* instead of the sagittal suture; the left ear in the central point of the os tincæ. And, at the same time, my left hand examining the abdomen, discovered the uterus of a stony hardness, and felt through the thin muscles, and slightly-adipous skin, with the greatest distinctness a *second head*, near the left anterior inferior spinous process of the ilium, and on the opposite side, a little higher up, a foot or knee; the placenta was plainly felt to the left, and above the umbilicus. It appeared to be a twin case, the one presenting having its body upwards behind the placenta, and being perfectly locked over the neck by the other lying transversely, the liquor amnii completely or nearly escaped; (a case witnessed by myself a few years ago in a first birth of a woman forty-two years old, the liquor amnii had passed away a few days before.) A remission of contraction caused a turning of the head, under my finger, upon its longitudinal axis; the ear disappeared, and the presentation was the same as found on the first exploration. Although now but a small increase of vigour in the pulse was perceptible, the speedy recurrence of the alarming symptoms, with imminent danger of rupture of the uterus was to be apprehended, and the application of the forceps was attempted, but I found it impossible to pass the male blade on account of the firmness (as it appeared), wherewith the neck and shoulder of the *transverse* lying child was pressed down upon the one which presented. An unsuccessful trial to move upwards the locking child was made. Labour recommenced with the same force as before, and produced the same effect, viz.: rotary motion of the head, and ear presentation without any descent of the child. Levret's forceps (taken before), was now exchanged for Osiander's non-fenestred forceps, on account of the greater smallness and thinness of the blades, easier (for me, at least,) to apply in difficult cases, and the male blade was passed and fixed directly under the symphysis, as in cases of transverse presentation; the female blade applied, of course, very easily, and on turning, in making the traction, the head about 60° round, into its regular position, not a very strong traction was necessary, in connection with the labour, to pass the head through the lower strait, and the forceps dropped loose; but the head, having actually left the pelvis, was found remaining in the vulva, the neck firmly pressed against the symphysis pubis; an intermission of labour immediately following, though the face turned gradually towards the left thigh of the mother, but remained concealed by the protruded labia. The right shoulder was found in the middle of the pelvis, and the right arm developed, when the hand reached just out of the os externum; but moving down of the left shoulder from the upper margin of the pubes, or to move the same in any way, was impossible. Labour now recommencing, and rapidly increasing nearly to the former violence, without effecting any moving of the child downwards, the exploring finger discovered behind, towards the sacrum, a point of the other head (tip of the nose? ear? the chin?); in carefully passing and repassing with the exploring finger, it became clear that there were duplicatures of the violently compressed skin, but a continuation from one mouth to the other, with no rudiment of an arm or clavicle between the two heads, and the diagnosis was clear. "Two heads and but one body," the unborn head, as felt through the integuments of the abdomen, apparently of the same size as the one extracted, and the body lying where I had found it before the birth of the first head, only the neck stretched more apart as at that period, and the inferior part of the body lying a little lower than the unborn head, but not the least descending during the most energetic labour. Delay was dangerous; rupture of the uterus every moment to be feared. *Decapitation* and *turning afterwards* presented itself first; but the high position of the child, with its neck so closely wedged to the pubis; the still remaining possibility of finding, even after successfully performed operation, turning impossible, and further dissection the only sad resort. rendered a gloomy prognosis, still more so, because I had no decapitator; but, under the urgency of the singular case, a probe-pointed bistoury was already opened, when, (recollecting a remark of the afore-mentioned Siebold, made in my presence at Berlin, in 1815 or 16, concerning the largest diameters of the pelvis through which the children successively pass,) it occurred to my mind *that the diameter from shoulder to nates, doubling the abdomen, would not exceed the long diameter of the child's head!* And that, therefore, if the body could gradually be brought, right to left, in the large diameter of the pelvis and lower strait, the same might slide over the perineum, and the second head be born as in foot or breech presentations; the whole process similar to what has been described as spontaneous evolution in some lateral presentations. The right hand was, therefore, introduced as far as possible, and I found much room in the cavity of the sacrum, but my exertions to bring the body down into it were abortive., The pectoral part of the body, as it fell in a diagonal plane, passing from the right side of the neck of the left head to the right hip of the body, was standing low, but firmly in the oblique diameter of the upper strait. I therefore returned to my forceps,—introduced the male blade up the breast of the child in the direction of the left shoulder as far as I could; then the female blade along the back in the same direction, so as if to lay hold of a head offering in the first position, when I could, of course, not lock, the female blade reaching higher than the male,* but if the stem of the female blade is led across the *old* lock of Osiander's forceps, and resting against the pivot on which the plate closing the lock turns; (the reader making the trial with that forceps will find, that a tolerably firm hold may be caught of a subject, one blade protruding even two to three inches before the other;)—I then, with a firm hold and traction, pulled towards the sacrum, with such good effect that the nates descended low enough for me to lay the fore-finger of my left hand over the inguinal portion of the right side of the child, to secure with the thumb laid round the right thigh, the foot of the same leg, which lay drawn up and bent in the knee, and then, pulling gently and steadily, first towards the os coccygis, then over the perineum, succeeded in sliding the breech of that side over the same, and to develop the foot without any laceration of the indeed highly expansible perineum, so that now the exact centre of the child stood in the largest diameter of the lower strait; I now passed the fore-finger of my right hand over the inguinal portion of the child, laying hold of the foot with the thumb, as above, and passed the whole breech over the perineum without injury; after which, the portion of the child now occupying the *lower* aperture, was the opposite to that which occupied the *upper* strait before I took hold of the body with the forceps, viz., what falls in a plane, dividing the body from the lowest part between the two heads to the lower part of the left side of the chest. The left arm, found on the breast, was next brought down, and the left head descended into the pelvis, when, the chin having been too soon moved from the breast, and the head standing with its largest periphery in the pelvis, a third application of the forceps was necessary, in order to complete the extraction of the child. The right head rose (immediately on the drawing of the body into the pelvis,) up outwards on the left side of the symphysis pubis, in proportion as the body descended passed over the symphysis, and was lying right of the same when the second head left the pelvis.

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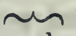
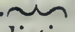
* The point of the male blade had been put (as could be seen by a dark stripe for several days observable on the body after delivery,) against the scapular end of the clavicle, just before the shoulder joint of the left shoulder, and the female blade over the spine of the scapula of the same side.

After detaching the child, the placenta appeared in the vagina, and came away immediately after, followed by some blood, but not in greater quantity than usual in regular deliveries. The mother was placed in bed nearly fifteen minutes before seven, ten to twelve minutes after the second application of the forceps was resorted to, and passed her puerperium as wel (she contends better), than ever before, being out of bed during the whole day from the fifth day after delivery.

The child proved to be a monstrosity of very singular beauty and perfection. When examined, five hours after birth, I found its weigh 9℔ 2½oz, its length, from the vertex of each head to the sole of the feet, 19¼ inches. The diameters of the heads (both covered with considerable chestnut brown hair), are perfectly alike, viz., the short diameter (from one parietal protuberance to the other), three inches four lines; the large diameter (from the middle between the areas superciliares to the posterior fontanelle), four inches six lines. The oblique or largest diameter (from the spina mentalis to the most elevated part of the os occipitis), a little above five inches.

The posterior fontanelle is nearly closed, and the frontal bones movable (in both heads alike). The width of the body over the shoulders is six inches and three-quarters, under the axilla five inches, over the hip the same (five inches). Distance from the lowest point between the two heads to the symphysis pubis six inches and a half.

The necks with their vertebral column from each head to its seventh vertebra colli are perfectly normal. From the first dorsal vertebra downwards, are the transverse processes at the inner sides of the two columns united, and protruded backwards in a pointed angle, and appear under the finger as the following figure  made of wood would be felt through a cloth drawn over it, and the last dorsal vertebra.  The transverse processes at the outward sides of the columns are distinctly felt to be normal The first lumbar vertebra (single) is broader than usual, feels in the middle rather concave; the second normal. One regularly formed and regularly inserted scapula is found at the outward side of each vertebral column.

In front of the body the sternum is felt between the two clavicles, half s broad again at the top as regular, but not longer. The two claviles are regularly shaped and inserted. The rest is perfectly normal and proportioned. A regular umbilical cord, (placenta of middle size, I think, which to examine nearer was forgotten at the moment.) The male external genital organs (scrotum with the left testicle only descended and penis) of the ize and perfection as in other full-born infants. The upper and lower extremities of a grace and symmetry pronounced by artists *truly antique*, only he left foot has a slight indication of a varus, drawing the sole of the feet very little inwards and upwards. The face of the right head was immediately after birth of a blue colour, bloated, and had evidently died of suffocation. The face of the left was pale, natural, and appeared as that of a still-born infant having died from syncope; still the similarity in the fine formed features could not be overlooked at that time, but now, after the apse of six months' preservation in alcohol, where the first born head is as pale as the other, the similarity is perfect.

That the fœtus is full-grown, and had lived up to the time when the first head left the pelvis, is evident from the perfect evolution of this fantastic production of nature's plastic art, and from the suffocated appearance of the first-born head, besides which, the mother declares that she felt life even during labour; yet, and if exertions were made to breathe by that head, when between the labia, and the fœtus has but one heart, (as I think to be the case,) the time of death would be fixed at a period very shortly after the first head had left the pelvis, and, moreover, the syncopic pallor of the other head be explained.

Some meconium had escaped and coloured the nates, but not more than in almost every detained passing of the trunk through the pelvis, and had not death occurred *before* the body passed the same, the child might have been born alive (I should think), as easy as in any other breech or foot birth.

Might not, then, in many cases of side presentation, that evolution which nature sometimes successfully accomplishes *without* our interference, to the easier preservation of the mother, and of the child more so, be effected *artificially* even with less pain and danger, if circumstances admit, than turning? When turning is impracticable, there can be no doubt that a trial ought to be made (child dead or not) before embryotomy is attempted.

As a closing remark I would add, that those writers on obstetrics who contend that in spontaneous evolution the child's head does *not* rise in the uterus, have here a case which proves that that evolution is at least *possible* without the rising of the head in the uterus, for here the head *could* not rise.

Art. VII.—*Isopathia: or the Parallelism of Diseases.* By John M. B. Harden, M. D., of Liberty County, Georgia.

In resuming the subject of the parallelism of diseases, "I feel like the clown who, after several unsuccessful attempts to play upon a violin, threw it hastily from him exclaiming, at the same time, that there was music in it, but that he could not bring it out."* I have waited thus long in hope of being better prepared to follow it out, but limited as my own field c observation is, and must necessarily continue to be, and restricted as I an in my researches into the recorded experience and observations of others I fear that that time may never arrive, and I have, therefore, determined t throw out the following remarks as *hints* and *suggestions* towards th development of the Isopathic Law.

Before proceeding farther, however, in order that I may be clearly understood, I beg leave to make a few preliminary remarks; forewarning m readers at the same time that, although many of the principles advance in the following pages are of a debateable character, I shall have to assum them as postulates for the present, holding myself ready, upon proper occasions, either fully to defend, or freely to renounce them.

The defects of all nosological systems hitherto attempted are readily seen and will be as readily admitted by all. The most superficial examinatio will serve to show that diseases the most closely allied, have been violentl forced asunder, while others, equally distinct, have been grouped togethe under the same family or specific designation. This has, no doubt, arise as much from the intrinsic difficulty of the subject itself, as from the exclusive methods which have been adopted as the basis of classification. Disease, abstractly considered, is not an *entity* or *substantive thing*, possesse of distinct qualities or properties by which it may be distinguished and arranged like the objects† of natural history, but rather a mere mode or condition of the living organism, consisting in a certain change or series c changes in the solids and fluids, the external manifestations of which ar the phenomena, whether vital, physical, mechanical or chemical, presente during its continuance, or after the death of the individual subject of i The difficulty under which the nosologist labours, therefore, may be appreciated by reflecting that the classification of diseases is but a classif cation of *modes or conditions* of the living system, or more properly, perhaps, the *varying phenomena* connected with those *conditions*.

The methods, also, which have been adopted, or the principles whic have formed the grounds of nosological distinctions, have been far *too exclusive*. The etiological method employed by Boerhaave and Hoffmar is certainly not applicable to all diseases, on account of the impossibility c ascertaining and distinguishing, in many cases, the predisposing and exciting *causes*. It is certain that there are some affections brought on b the operation of specific causes, but it is also very certain that there ar many identical diseases induced by very different general causes actin upon a system with a certain predisposition which is not understood.

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* Rush. Inquiry into the relation of Tastes and Aliments.

† This seems to have been the opinion of the earlier nosologists who adopted it a a maxim, that "Symptomata se habent ad morbum ut folia et fulcra ad Plantam "Ce qui," says Broussais, "suppose que les maladies tiennent dans la nature le mêm rang que les végétaux."

The same may be said of symptomatology, which formed the basis of he systems of all the earlier writers, as Sauvages, Sagar, Linneus, Vogel, nd Cullen, together with McBride and Selle, for it is evident to any prac- sed physician, that many diseases, distinct in their nature, when seated n the same organ, will exhibit themselves in phenomena so identical as to e confounded together by the most *experienced.* "Thus we have seen oftening of the brain mistaken for typhoid fever by the most profound iagnosticians; because in the instance alluded to, the *symptoms* to which he former gave rise so nearly resembled those usually characterizing the atter, especially, we presume, in reference to the brain, as to have led, if not necessarily, at least very easily, into error. Many cases analogous to he above in fact occur, in which we must depend chiefly for our diagnosis not upon what may be called the physiological symptoms, but upon a know- edge of the circumstances under which the disease arose, its commence- nent, course, invasion, collateral circumstances,* &c." The same objec- ions apply with still greater force to the functional or physiological plan adopted by Dr. John Mason Good.

The *tissual, organic, or topographic system* which originated with Bichat, and has been embraced to a greater or less extent by MM. Broussais,† Prost, Boisseau, Bouillaud, and others, seems to me to be surrounded with still greater difficulties. The localization of all essential diseases, although declared by the latter to be "the most beautiful conquest of modern medicine," yet, founded as it is upon the erroneous notion which refers disease entirely to an altered vital action without regard to the mechanical and chemical actions of the system, must necessarily be defective. If all diseases are local, and merely differ according to their differences of seat, then, unless all diseases are an unit, "we should soon be acquainted with all the different inflammations in the same person, at the same time, and even in the same wound; for instance, in an amputation of a leg, where we cut through skin, cellular membranes, muscles, tendon, periosteum, bone and marrow, the skin should give us the inflammation of its kind, the cellular membrane of its kind, the muscles of theirs, the tendons of theirs, the periosteum, bone, marrow, &c., of theirs; but we find it is the *same inflammation* in them all. It is the adhesion in them all, if the parts are brought together; it is the suppuration, if parts are exposed."‡ Now as the same morbid action may attack different tissues or parts of the body, so it is equally true that different morbid actions may attack the same tissue or part of the system, and although "pathological formations or types are slightly different in different parts of the body, as is the case with animals or plants in different climates or soils, yet the species is invariable and always to be recognized."§

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* Amer. Journ. Med. Sci., Feb., 1838, pp. 417, 418.

† It is true that Broussais directed attention to the causes and symptoms in studying the nature of diseases, but he made the suffering organ the basis of that knowledge. Examen, vol. ii. p. 489.

‡ Hunter on the Blood, vol. i. p. 257.

§ Cruveilhier. Amer. Journ. Med. Sci., Oct., 1844, p. 512.

Pathological anatomy, the offspring of Bonetus, Valsalva, and Morgagni which has been so highly advanced by the labours of Laennec, Hope, Cruveilhier, Carswell, and many others, although offering greater claims upon our attention than any other isolated method for investigating and distinguishing diseases, is still defective.* *Pathological anatomy is not pathology*, the lesions left *after death are not disease*, but simply the effect o the morbid action which had been going on in the system during life, and should be considered as nothing more than a kind of special symptomatology "Physicians open a body and find hypertrophy of the liver or hardness o the spleen, and conclude that the patient died from one or the other of these affections; but they are blind to the fact that hundreds pursue their daily avocations with enlarged livers and hypertrophied spleens, and that women can walk about with ovaria enlarged to the size of a child, till, at last, being found in the dead body, it is presumed that death has ensued in consequence of these enlargements! Shall we never learn from such facts tha diseases do not originate from diseased masses and products, but that these same bodies are the effect of disease, and the *token that it has been present* Shall we never learn that the patient died not from these pathologica growths, but from the process of disease which called them into existence and farther, that we are not to direct our attention to the mere residues o disease and the products of death, but rather to the destructive or death process itself?"† But, besides all this, "there are numerous cases arranged into different genera of disease; some of them very important and even rapidly fatal, for example, different forms of fever, certain cases of apoplexy and syncope, tetanus, hydrophobia, &c. &c., which do not necessarily nor uniformly leave behind them, so far as is yet known, any alterations of textures, or other change perceptible to the anatomist, the patholog of which diseases, therefore, although it may derive assistance from, canno possibly be founded on, the *knowledge of morbid appearances*."‡

But a more important and interesting mode of investigating diseases consists in the application of chemistry and the microscope to the study of th state of the fluids and morbid products of the body before and after death We *rejoice* to see the *humeral pathology revived under such auspices* Already have the labours of Magendie, Andral, Dumas, Donné, Prout Liebig, Raciborski, Muller, and others, thrown important light upon ou path, and it is to be hoped that diseases will, ere long, be brought within the range of physical laws, and be treated upon philosophical principles But even here caution is necessary in the application of these methods, fo although it has been most clearly demonstrated that medicines as well a morbid agents operate upon the system through the medium of the bloo as well as through the nerves, it would be rashness to look for traces of al diseases in the blood and other fluids. In many, the alterations to be discovered are either entirely nugatory or accidental complications in the progress of the morbid actions.

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* We are happy to find our remarks upon this point so happily accordant wit those of the reviewer of Schultz's General Pathology in the London and Edinburg Monthly Journal of Medicine for Aug., 1845. Indeed we might be accused of plagiarism, did we not state that the above remarks are precisely as I find them in m manuscript notes, taken down nearly two years ago.

† Amer. Journ. Med. Sci., Oct., 1845, pp. 473, 474.

‡ Alison's Outlines of Pathology.

The question now comes up, by what method are we to distinguish and classify diseases? Our answer emphatically is,—by a rightful combination and use of all the methods passed in review, so far as they may be applicable to the case before us,—by an investigation of the *causes*, so far as they may be known to us, whether predisposing or exciting,—by a careful observation and comparison of *symptoms*, as they present themselves in connection with the *seats* or *organs* whose functions may be disturbed during the progress of the disease,—by a critical *inspection* of the *lesions* which may be presented after death,—by an examination of the state of the *blood* and *other fluids*,—and lastly, by all those collateral aids which may be afforded by the *history* of the disease and other circumstances already alluded to in a former paper.

With these remarks, we now proceed to take up in order the types into which we have divided diseases, for the purpose of tracing, so far as we may be able, the isopathic connection that may exist among them.

Inflammatory types.—The term inflammation,* besides being objectionable in itself, has been used in a sense so vague and uncertain, that it is difficult, if not impossible to define its meaning. According to the doctrine of the physiological school, which makes inflammation consist in nothing more than an increase in the normal *vital action* of a part under the influence of the morbid cause, the term would embrace the most of the diseases to which the human body is subject, and we are not surprised that Broussais should have contended that pus and tubercle, and the matter of carcinoma, and, in one word, that all degenerescences of structure, were the product of inflammatory action. But even in the more restricted sense of the term, as used by John Hunter, it appears to me that several distinct morbid species have been united together. He evidently regarded simple inflammation as a specific affection, and that adhesion, suppuration, ulceration or gangrene, was nothing more than a mode of termination of the same morbid action.† Now it appears to me that the following should be regarded as axioms in pathology.

1. That unless all morbid actions and processes are general, and of the same nature, and hence, all diseases an unit, every disease must be of a specific character, specific in its incipiency, specific in its progress and specific in its termination.

2. That there are certain changes in the fluids which, from their constancy and uniformity, may be regarded as specific characteristics of the specific morbid condition, and hence, whenever they occur, determine at once the nature of the disease.

3. That a disease which terminates in adhesion or the effusion of coagulable lymph is a specific disease that, left to itself and not modified in its course by remedial agents, could have terminated in no other way; so also a disease ending in suppuration has affixed to it that specific characteristic,

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* The term hyperæmia, substituted by M. Andral, we do not consider less objectionable, in a pathological point of view.

† On the blood, vol. i. p. 254.

and its tendency from its incipiency was to that result. The same may be said of any other disease with a specific termination.

I can have no doubt that an open wound may be attended with a kind of suppurative action, or that the mucous membrane of the urethra may ulcerate from the continued irritation of a bougie, or that a part may mortify under the operation of violent causes, as intense cold, &c., and in neither case can these results be regarded as peculiar or specific. But these local effects of local causes cannot be considered as invalidating the truth of the last proposition in its application to constitutional affections in which the termination must be considered as one of the most decisive tests of the true nature of the disease.

Using the term inflammation, therefore, as a specific appellation, we would restrict it entirely to the adhesive form of Mr. Hunter, but adhering to general usage, we will consider under the head of inflammatory types one form of suppurative disease and gangrene or mortification.

Let us now trace out the pathognomonic symptoms of adhesive inflammation. The causes are of a general character, and their mode of operation not well understood. There is fever with a full pulse and a tolerance of blood-letting. The blood exhibits a buffy coat* and an evident increase of fibrin. The termination is by an effusion of coagulable or plastic lymph, and the formation of false membranes or carnification. Of these symptoms there is none more uniform, more constant, nor more important than the *increase* of *fibrin in the blood.* MM. Becquerel and Rodier state that "the proportion of this element is *invariably increased above the normal* standard in all *genuine phlegmasiæ.* This, in short, is the fundamental and essential character of all inflammatory diseases; *without it an inflammation cannot exist.* This increase in the quantity of the fibrin is *invariably found to exist*, whatever may be the composition of the blood in other respects, and the proportion of its other constituents." And to the same end we might cite the experiments of MM. Andral and Gavarret: "Not long since," says Andral,† "Meckel defined inflammation to be congestion with a *tendency to new production.*" The study of the blood shows the justness of this definition. For what else than a new production is this excess of fibrin which suddenly appears in the blood of a person attacked with pneumonia or erysipelas, with an inflammation of the tonsils, of the tongue, of the bronchia, or of the peritoneum? "A new and redundant production of fibrin in the blood is then *the least variable* sign of a certain number of diseases which present further analogies in the nature of the general symptoms accompanying them, and in the uniformity of the treatment which they require." So great is the stress which M. Andral lays upon this "increase in the spontaneously coagulable matter of the blood," that he is led to regard all diseases, however different their seats, as being of the same nature if this characteristic is to be found.‡

Of equal importance is the exudation of the blood plasma in determining the species of inflammation. Dr. Bennett§ "regards the anormal exudation of the liquor sanguinis or blood plasma as the essential phenomenon of inflammation." And the reviewer of Dr. Bennett's work goes on to say that the "exudation of blood-plasma is then the only positive proof we have of inflammation; and the want of a recognition of it as the essential phenomenon has surrounded the description of the disease with vagueness and inconsistencies."

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* Mulder supposes that the buffy coat is formed from the albumen of the blood and consists of the deutoxide and tritoxide of proteine; and from the fact that the albumen is relatively diminished, MM. Becquerel and Rodier have adopted the opinion that the increase of fibrin is brought about by a transformation of the albumen. —Med. Chir. Rev., April, 1845, p. 521, and July, 1845, p. 263.

† Essay on the Blood, p. 60.

‡ Op. cit., p. 68.

§ Med. Chir. Rev., Jan., 1845, p. 93.

We think we are justifiable, then, in concluding that all diseases possessed of the above characteristics, however different in their seats and some other symptoms, are pathologically the same, and we will now attempt to analyze those types which we suppose to hold to each other this *isopathic connection.*

The prototype of this disease is evidently the essential fever which is commonly known under the name of *inflammatory fever*, and is in all respects the same as the "*imputrid synochus*" of Galen; the "*imputrid continued fever*" of Boerhaave; the "*imputrid continent fever*" of Lomnius; the "*sanguineous continued fever*" of Hoffman; the "*synocha*" of Sauvage, Linnæus, Cullen, &c.; the "*cauma*" of Drs. Young and Good; the "*rheumatic fever*" of Sarcone; the "*argeiotenic fever*" of Pinel, and the "*hæmitis*" of M. Piorry. We will now point out, as briefly as possible, the various types or forms in which this fever may manifest itself.

When it attacks the joints, or seems to be seated in the muscular or fibrous tissue of the system, it has received the name of rheumatic fever or acute rheumatism. This disease has always, we believe, been regarded as one of highly inflammatory character, and agrees in every essential particular with the fever above-mentioned. Andral* found the fibrin of the blood invariably increased in quality, and it is universally admitted to be a disease which now terminates† *in suppuration.* The disease, when confined to the joints, so rarely terminates fatally, that we are not well acquainted with its pathological anatomy, but in those cases where it has ended in death by a translation or metastasis to some vital organ, an exudation of coagulable lymph has always been found.‡

When this disease attacks the heart or its investing membranes, it has received the name of pericarditis, carditis or endocarditis. This extension or metastasis of rheumatism was first pointed out by Dr. Baillie, and many instances of the kind have since been recorded by various authorities. Dr. Odier, of Geneva, in his "Manuel de Médecine Pratique," mentions, among the various symptoms which are apt to supervene on acute rheumatism, an *affection of the heart* that frequently degenerates into a chronic complaint. Dr. Wells has collected several cases of this kind in the 3d vol. of Transactions for the Improvement of Medical and Chirurgical Knowledge, which may be consulted with advantage. Sir David Dundas, in a paper read before the Medico-Chirurgical Society in Nov., 1808, draws the attention of the faculty to the subject. He met with no less than nine cases in the course of thirty-six years. Dr. Marcet met with two cases of rheumatic metastasis from the extremities to the chest. They proved fatal. "My worthy friend, Dr. McArthur," says Dr. James Johnson, "writes to me thus: 'In a few instances I have noticed pain in the intercostal muscles, and palpitations of the heart to an alarming degree in acute rheumatism: but I do not know whether they could properly be called metastasis, because the original inflammation of the joints had not previously receded; they were, however, decidedly rheumatic, and declined 'pari passu,' with the other local symptoms. The disease might be termed extension of the rheumatic action to the heart."*

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* Op. cit., p. 74.

† I know that exceptions are given to this rule. I am of opinion, however, that in such cases the disease had lost its original character.

‡ See cases by Dr. Johnson, on Liver; also Mèd. Chir. Rev., vol. xxxviii. p. 67.

This intimate connection between acute articular rheumatism and disease of the heart has been also referred to by Hughes,† Bouillaud,‡ Brachet,§ Carswell,‖ Macleod,¶ Todd,** Chomel,†† Latham,‡‡ and many others. Indeed so constant and uniform has been this relation in the practice of M. Bouillaud, that he has written a work with special reference to this law§§ of coincidence, in which he avers that "he has satisfied himself that both these affections (viz., pericarditis and endocarditis), constitute in some measure *natural elements* of the disease, (articular rheumatism,) which, regarded in a juster and more comprehensive point of view, consists of inflammation of the fibro-serous tissues in general." This same view has also been taken by Dr. Macleod. The latter says: "I have no hesitation in expressing my conviction that the pericarditis supervening during rheumatic fever may more correctly be regarded as an extension of the disease than as a true metastasis."

In the same manner rheumatic fever may also show itself upon the peritoneum, giving us a form of peritonitis, or upon the pleura, when we have a form of pleurisy. M. Bouillaud says, "Rheumatism is in fact *nothing else than a pleurisy of the synovial membranes,*" and in his "Treatise on Diseases of the Heart," he says, "rheumatism is, so to speak, nothing else than pericarditis of the joints," by which language he evidently intends to convey the idea that these diseases are *mutually convertible*, and may *replace one another.*

Baglivi,‖‖ it appears, led by the similarity in the appearance of the blood drawn in cases of rheumatism and pleurisy, held that a similar mode of treatment was applicable to both, and of course that they belonged to the same pathological type. "On the ground," says he, "of this analogy¶¶

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* The above cases I have taken, in the words of the author, from the work of Dr. James Johnson, "On Derangements of the Liver, Internal Organs, and Nervous System," pp. 139, et seq.

† Med. Chir. Rev., April, 1836, p. 547.

‡ Ibid., July, 1836, pp. 83, 84, 85, 514; April, 1836, p. 357; Jan., 1841, p. 66, 193.

§ Ibid., April, 1838, p. 538.

‖ Ibid., July, 1839, p. 276.

¶ Ibid., April, 1842, p. 409.

** Ibid., Oct., 1843, p. 476.

†† Am. Journ. Med. Sci., Feb., 1837, p. 451.

‡‡ Med. Chir. Rev., July, 1845, p. 173.

§§ Nouvelles Recherches sur le Rheumatisme articulaire aigu en Général et specielement sur la loi de coincidence de la Pericardite et de l'Endocardite avec cette maladie.—Paris, 1836.

‖‖ Med. Chir. Rev., July, 1836, p. 86.

¶¶ To show that this *mode of reasoning* is of ancient date, having been made use of by the sect of empirics, we quote the following from Broussais' Examen des Doctrines Médicales, vol. i. p. 88 and 89.—"Comparer une maladie actuelle avec les maladies déjà vues suffisait donc aux derniers pour tous les cas ordinaires. Mais il en était d'autres où nulle comparaison n'étant possible, c'étaient ceux des maladies nouvelles. Alors on avait recours à *l'analogie*, c'est à dire que l'on jugeait du caractère de la maladie inconnue ou non consignée dans l'histoire par ceux des maladies connues qui paraissaient avoir le plus de rapports avec elle; on appliquait à la nouvelle ce qu'on savait des anciennes qui lui étaient ainsi mentalement substituées; c'est que l'on appellait la *substitution.*

"Ainsi *l'observation* ou *l'autopsie, l'histoire* et la *substitution*, '*transitus ad simile,*' formaient, selon les empiriques, le triple fondement ou le trépied de la médecine," and in their attempts to find out a mode of treatment best adapted to the new or unknown disease, they adopted the following very *simple, concise,* and *prudent mode* of reasoning: "*Puisque cette maladie est semblable à cette autre, elle doit être traité de la même manière.*"

alone we may safely reason from the treatment of the one disease to that which would be proper in the other, so as, in fact, to find that the same remedies are applicable to both." Sir John Floyer would appear to have entertained the same opinion, for he alleges "that *pleurisy is nothing else than a kind of rheumatism.*" The symptoms and anatomical characters of the diseases leave no doubt on our mind of their *perfect identity.*

But this fever may also seat itself upon the parenchymatous structures of the various organs, giving rise to as many distinct diseases according to the nomenclature of nosologists. I can have no doubt that the most common form in which pneumonia presents itself to us is entirely isopathic with the rheumatic or inflammatory fever. The fact has long been known that peripneumony very rarely, if ever, terminates in suppuration. Abscess of the lung is a very rare thing as a sequel of this complaint. Dr. Chambers,* in the *London Medical and Physical Journal* for September, 1827, asserts "that during fifteen years he had been physician to St. George's Hospital, the number of deaths from pulmonary disease had amounted to above six hundred, (600,) and that the bodies of all these persons, with a very few exceptions, had been carefully examined after death, and amongst them, according to the best of his recollection, there had been found only three cases of pure phlegmonous abscess in the lungs." Laennec, it is said,† only met with five or six cases of it, Andral only one. The termination of the disease is always by an effusion of blood-plasma or coagulable lymph, forming what has been called hepatization or carnification of the lung. Reasoning, then, upon the principle of the "*transitus ad simile,*" how can we resist the conclusion of its intimate association with this type or species of disease?

But farther, the reviewer‡ of Dr. Latham's "Lectures connected with clinical medicine, comprising Diseases of the Heart," holds the following language. "While every physician in the present day knows full well that pericarditis and endocarditis *are very common accompaniments* of this disease (rheumatism), not many, probably, are aware that *inflammation of the lungs*, we use this term to comprehend *pneumonia*, *pleuritis*, and *bronchitis*, is also a not unfrequent complication at the same time. Of Dr. Latham's 130 cases of acute rheumatism, the heart was inflamed in 90, or in two-thirds of the whole: while the lungs were inflamed in 24, or 1 in 5½. These 24 cases consisted of 4 of *bronchitis*, 18 of pneumonia, and 2 of pleurisy. Of the four cases of bronchitis the affection was no mere catarrh, but an *inflammation largely* diffused through both lungs, producing deep oppression and dyspnœa. Of the two pleurisies one was single, and the other double. The single pleurisy produced a large effusion into one side. The double pleurisy produced a double hydrothorax. Of the eighteen instances of pneumonia, in nine the disease was of one lung, and in nine it was of both." Now the mode of reasoning by which we would apply the facts to prove the identity of these diseases is simply this. If pericarditis, pneumonia, and pleurisy may exist as a secondary effect or complication of the disease known as acute articular rheumatism, then *acute articular rheumatism* may arise as a complication of these first named affections, or a secondary result. The diseases, then, are *mutually convertible*, and if, although being *mutually convertible*, *acute articular rheumatism* may exist simply without implicating the internal organs, so also the same disease, originating primarily in the pleura, lungs, or pericardium, may not be complicated with disease of the joints, and still may be the same disease as though it had originated in the joints.

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* Am. Journ. Med. Sci., Feb., 1828, p. 475.

† Med. Chir. Rev., Jan., 1844, p. 168, and April, 1844, p. 465.

‡ Ibid., July, 1845, p. 172.

M. Rayer,* in his "*Traités des Maladies des Reins,*" describes a rheumatic form of nephritis, and points out very accurately the post-mortem appearances exhibited in the kidney, and M. Chomel,† in his "*Leçons de Clinique Médicale,*" has called attention to the rheumatic character of several other visceral affections heretofore included under the sweeping term *inflammation;* but we need not pursue this branch of our subject farther.

I fear I shall excite the smile of my reader when I attempt to trace out this disease upon the *tegumentary tissues* of the body; but I have myself no doubt of the fact that it may manifest itself upon these organs. It may appear upon the cutaneous surface in the form of a scarlatinous or erysipelatous eruption. I do not pretend to say that every form of erysipelas belongs to this type. The phlegmonous I regard as entirely and specifically distinct from the true or inflammatory erysipelas, and I will treat of it under the head of purulent types; but that the latter is identical with the inflammatory or rheumatic fever, is proved by the treatment which is best adapted to its cure, and the state of the blood of those who are attacked by it. In cases of acute febrile erysipelas, M. Andral‡ has determined an *increase of fibrine* equal to that which takes place in the most highly inflammatory diseases, and represented by the numbers 6 and 7 in a thousand parts.

This form of erysipelas may extend to the mucous membranes of the different internal cavities. When it attacks the mouth and fauces it produces that peculiar disease first described by M. Bretonneau,§ of Tours, under the name of *diphtherite,* or angina membranacea. When lower down, involving the larynx and trachea, we have the disease known as croup, the "*cynanche trachealis*" of Cullen, the "*empresma bronchlemmitis*" of Dr. Good. The identity of these two last-mentioned affections has been fully confirmed by several observers. "M. Gendron‖ regards diphtherite and croup as *the same disease,* only occupying different parts. In the one case the cavity of the mouth and fauces is chiefly affected; in the other the larynx and trachea. In both, the character of the inflammation is the same, and there is the same disposition to the *deposit of the false membranes.*" Mr. Ryland¶ says that M. Bretonneau "considers the *ordinary croup of children,* the *cynanche maligna,* and the *plastic angina* or *angina couenneuse* of the French, are all *precisely the same disease,* but producing different effects according to the seat and degree of the morbid action." This same view of these diseases was also taken by Guernsent and Laennec.** Dr. Ruppius, of Freiburg, very justly remarks that "the morbid action or process in this disease (diphtherite), is essentially the same as characterizes the well-known disease of croup or cynanche trachealis. In both the inflammation of the affected mucous tissue has a very marked tendency to cause an exudation of a membraniform lymph on its surface. In the one this phenomenon is usually limited to the trachea and lower part of the larynx; while in the other it is observed chiefly on the velum palati, the tonsils and back part of the fauces."—*Med. Chir. Rev.*, from the *Zeitschrift fur die Gesam. Med.*, vol. xxxiv. p. 595. Dr. Stokes* holds the following language upon this subject:—"This diphtheritis is a most formidable disease. It is analogous, in many of its most prominent features, to that affection which the old medical writers called cynanche maligna; at all events it resembles it in this, that in both there is the formation of a dense albuminous pellicle, and I think that as far as it goes, we may call it a species of croup in the cavity of the mouth and pharynx." Diphtherite sometimes attacks the external surface when it is known as *cutaneous diphtherite.* "This curious affection, noticed by Bretonneau, has been especially described by Trousseau. It consists of a pseudo-membranous inflammation of the skin prevailing during the epidemics of pseudo-membranous angina, affecting any part which becomes denuded of the cuticle as by blisters, excoriation, friction, &c "†

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* Med. Chir. Rev., Jan., 1842, pp. 58, 59.

† Amer. Journ. of Med. Sci., Feb., 1837, p. 451.

‡ Pathological Hematology, p. 72.

§ See a notice of Mr. Ryland's "Treatise on the Diseases and Injuries of the Larynx," in Amer. Journ. of Med. Sci., Feb., 1838, p. 443.

‖ Med. Chir. Rev., vol. xxiii. p. 538.

¶ Ibid. Jan., 1838, pp. 52, 53.

** Ibid., Jan., 1838, p. 53.

We pass on to notice one more affection which we suppose to be connected with this species. I allude to the diarrhœa tubularis of Dr. Good. This disease was first arranged in a nosological classification by Good, who says in regard to it that "it appears to depend on a peculiar irritability of the mucous membranes of the large intestines, which in consequence secrete an effusion of coagulating fibrin, fibrin mixed with albumen instead of secreting mucus. It has a *striking resemblance* to the fibrous exudation thrown forth from the trachea in croup, but is usually discharged in longer, firmer, and more compact tubes."—*Study of Med.*, vol. i. p. 252. Blumenbach has shown that a like effusion of fibrin sometimes takes place into the uterus through the excitement of an aphrodisiac passion alone, without copulation or impregnation, and "Morgagni has given examples of so perfect a formation of the same membrane by the irritation that takes place in painful menstruation, as to render it difficult to be distinguished from that belonging to an ovum." I remember to have attended a lady once who, after suffering violently from strangury, passed a membraniform substance from the urethra which was represented to me as being of a tubular character.

Having now passed through some of the modifications of our first species of inflammation, we propose to consider under the same general head two affections which, although regarded universally as *mere terminations* of inflammation, are, in our opinion, distinct species of disease. We allude to suppuration and gangrene or mortification. We will take up the last mentioned, first in order.

We can readily believe that gangrene or mortification may be a termination of any violent acute disease, under peculiar circumstances, and, of course, in all such instances, it cannot be regarded as a specific feature, although, like the putrescent state of the blood, on which it no doubt depends, it must always be regarded as a fearful complication. But there certainly is a kind of gangrene which must be considered *primary* and specific, and so far as we can discover, not the result of inflammation, or, at least, of that species which we have above described.

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* I am aware that diphtheritic angina has sometimes been found to be symptomatic of scarlatina, and hence, according to our mode of reasoning, we might conclude that these two diseases are isopathic with one another, and with the species we are now considering. How far this may be true, I will not take upon me to say, but I have been tempted to believe that the scarlatina of children was the erysipelas of the adult, and properly belonged to this species. The fact that in children there must be a great disposition to an increase of fibrin for the purposes of growth, renders probable a greater tendency to a morbid alteration in this process, and hence, their greater liability to the disease, but the apparent contagious nature of scarlatina renders the connection doubtful.

† It must be admitted, however, that in relation to the last-mentioned diseases there is so much confusion and difficulty, as is the case indeed with all diseases of the tegumentary tissues, that the determination of the precise relation which they hold to one another, must be a matter of more or less doubt.

Most authors in treating of this disease, seem to consider it, for the most part, as a local affection, or, if they refer it to a general state of the system, they seem not to connect that condition with the local disease, except in a very general or indirect manner. Even in cases of spontaneous gangrene, various causes have been assigned for its origin which are entirely of a local and mechanical character. Ossification of arteries or their obliteration by coagula of fibrin, ossification of the valves of the heart, a disturbance of the nervous influence, &c. &c., have been said to give rise to it. Bating those cases, however, where the local affection has been induced by the application of such local causes as would tend, at once, to produce the immediate death of the part, as heat, cold, &c., there is good reason for believing that the disease is dependent upon a morbid, constitutional process, which may be considered to be a putrescent fever, or a putrefactive fermentation of the fluids, whose tendency is to bring about the death of those parts where the force of the disease may spend itself.

I am happy to find this opinion supported by an authority so high as that of Mr. Travers. He says, "gangrenous inflammation is, therefore, to be regarded as essentially of constitutional origin in *all circumstances:* Its local termination is the same disorganization as follows from the work of destroying agents: in this extreme result only, do the inflammation of gangrene and the state of gangrene touch and analogize. When we speak of an inflammation passing into gangrene, we convey that the system is the medium through which such a change is effected, and that, thereby, the whole character of the action is changed." Again, "gangrenous inflammation is often secondary to intense cutaneous and cellular inflammation, and so common is this association, that the terms 'gangrenous erysipelas' and 'carbuncular abscess' are in practical use to denote these combinations, and the distinction of gangrenous from adhesive and suppurative inflammation. It is an acute inflammation *directly* disorganizing, because the resisting power of the parts affected by it is inadequate to sustain the circulation. . . . . . That it is a substantive mode of inflammation, is shown by its occasionally idiopathic existence, as well as its distinctly marked primary characters; by its supervention in decayed or diseased habits on very slight forms of injury; and, especially, by its tendency to spread along the neighbouring parts, from the extremities to the centre;" and again, "gangrenous inflammation may be primary, that is, no other mode of inflammation going before it. The circulation of the part and neighbourhood becomes stagnant, and the vessels, both arteries and veins, are choked with broken and semi-solid coagula. Is it due to the vehement intensity of the local inflammation and consequent exhaustion of the nervous life of the part, or to a *constitutional condition* which renders the solid and fluid elements incapable of entertaining the functions of the part, on which depend its temperature and principle of resistance to external agents, in other words, its life? In all cases, not produced by external injury, and in *many that are so produced, I believe, the latter is the true explanation.**

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* See a review of Travers and Bennett on Inflammation. Med. Chir. Rev., Jan., 1845, pp. 106 and 107.

The explanation which is given by Liebig of the action of putrid poisons upon the body, seems to me to apply here with remarkable force. In all such cases a morbid agent is introduced into the system, which, by *its presence*, excites an action allied to the *fermentative*, by which certain parts of the blood are transformed into new products. If the poison or exciting body meet in the blood, a principle from which, in its action upon the first, it may be renewed, the disease is contagious. If this principle do not exist, then the poison itself is lost in the transformations which ensue, and, of course, the disease is not contagious.* The small-pox and the measles may serve as examples of the first, while the common gangrene or sphacelus is an example of the second class of cases. This same view seems to be adopted also by M. Dumas† in his *Lectures on Organic Chemistry.*

That substances may act in this way upon the body is fully shown by the examples given to us of the poisonous properties of sausages in a state of putrefaction, when introduced into the stomach. Liebig, op. cit., p. 388, tells us that in such cases "all the substances in the body capable of putrefaction are gradually decomposed during the course of the disease, and after death nothing remains except fat, tendons, bones, and a few other substances which are incapable of putrefying in the conditions afforded by the body." This "*gangrenous infection*," as it has been called by Rokitanski, is beautifully illustrated in a case related by Dr. Budd, in his treatise "*On Diseases of the Liver.*" We take pleasure in transcribing the following comments of the author. "In this case," says he, "the existence of gangrene both in the liver and in the lung, was clearly shown by the defined line surrounding the gangrenous portions. The source of the mischief here, was, no doubt, the gangrene of the toes produced by cold. The man was in the prime of life, of spare habit, muscular, florid, and in good health at the time of the frost bite. The case shows us what a serious thing a small patch of gangrene in any part of the body may become. The dissemination of the gangrenous masses, the existence of a number of them isolated and at a distance from one another, proves that the septic agency *was conveyed by the blood.* The noxious matter thus disseminated destroyed the vitality of the tissues on which it acted most strongly. The chemical theory of these septic changes is now well known. All parts in which they are taking place have a tendency to affect other parts brought into contact with them with the same mode of transformation. The case just related, and it is by no means a solitary one, offers one of the most interesting illustrations of this theory in the whole range of pathology."

The reason why an action of this kind is not always general may be explained in the words of Liebig. Op. cit., p. 404. "The action as well as the generation of the matter of contagion is according to this view a chemical process participated in by all substances in the living body, and by all the constituents of those organs in which the vital principle does not overcome the chemical action. The contagion (or putrid poison) accordingly either *spreads itself over every part* of the body, or is confined particularly to certain organs, or only *a few* of them, according to the feebleness or intensity of *their resistance.*"

The rule which has been laid down by some surgeons in regard to the exact time when amputation should be performed in cases of mortification of a limb, proves that at times it is a constitutional affection and does not stop by the removal of the offending member. The rule to which I refer is that the operation should never be performed "before the mortification has stopped and a line of separation appears between the dead and living parts," a rule which should never be violated except when the mortification is *clearly local.*

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* Vide Chemistry in its Application to Agriculture and Physiology, by Justus Liebig.

† Med. Chir. Rev., July, 1842, p. 163.

But I presume that it will hardly be denied that mortification is very often a constitutional disorder, and it is not very important to our present purpose whether the mode of explanation which we have given of the manner in which the morbid cause operates be received or not, but surely it is reasonable to suppose that in all cases in which the blood seems to play so important a part in the disease, some morbid transformation of the kind to which we have above alluded should take place. For my own part, I am inclined to apply this explanation of the morbid process to most of the diseases that we will allude to in the remaining part of our paper.

The first disease which we shall notice as belonging to this type or species is the *gangrena senilis*, or dry gangrene of Pott. In this affection the gangrene or mortification appears to come on with no previous symptom of inflammation, and is for the most part confined to the lower extremities. It was at one time attributed to the eating of ergot or spurred rye (secale cornutum), but probably without sufficient reason.* Mr. Pott says of it that "it is very unlike to the mortification from inflammation, to that from external cold, from ligature and bandage, or to that which proceeds from any known and visible cause. It frequently happens to persons advanced in life, but it is by no means peculiar to old age."

Of a nature identical with this type is the disease commonly known to surgeons as "*hospital gangrene.*" Delpech defined it as "a peculiar disorganization of the soft parts so that they disappear without leaving any trace of their primitive tissue, and become a putrid homogeneous gluten." M. Vidal accepts the definition, but not without criticising it. "This definition," says he, "which has not only all the defects of surgical definitions, but also those which characterize the style of the author, may serve, however, to give an idea of the singular disease of which we are treating."† The disease is so well known that it is unnecessary to enter upon its description, which can be found in almost any surgical work, and is lucidly given by Hennen in his "*Principles of Military Surgery.*" It seems to be peculiar to hospitals, where it is aided in its progress by "*an impure and unventilated atmosphere.*" Dr. Good‡ supposes that it may be propagated by contagion. M. Devergie§ is of opinion that the cause of the disease in the St. Louis Hospital, in Paris, is its exposure to "the unhealthy *emanations* from *Montfaucon*, (where there is a large *abattoir* or slaughtering-house, and where there is often collected an immense accumulation of most offensive animal refuse,) *as the patients in those wards which were on the other side of the building seemed to be quite exempt from it.*"

The next form of disease which we must associate with this type or species is *pulmonary gangrene* or *gangrene of the lungs.* This disease we believe, was first distinctly described by Laennec, who says of it,‖ "It can *hardly be regarded as one of the terminations of inflammation* of that viscus, and still less can it be regarded as a consequence of the *intensity* of *the inflammation.* In truth, in such cases the inflammatory character is very little conspicuous either in the symptoms or in the morbid condition of the injured organ. I would, therefore, say that this disease *is allied to those affections which are essentially or idiopathically gangrenous*, such, for instance, as the *different varieties of anthrax*, and that the inflammation existing around the gangrened part is rather *the effect than the cause of the mortification.*" M. Guislain* has adopted in part this opinion of Laennec. "M. Chomel has described a gangrenous condition of the lung which he has found occasionally in the bodies of those who have died from the effects of exposure to the effluvia from cesspools and sewers."

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* Practice of Medicine, by M. Hall, p. 112. I cannot but believe, however, upon the authority of authors, that a similar, if not identical, disease is produced by the action of ergot.

† Med. Chir. Rev., July, 1842, p. 175.

‡ Study of Med., vol. iii. p. 494.

§ Med. Chir. Rev., vol. xxxviii. p. 140.

‖ Diseases of Chest, p. 64.

M. Boudet's† observations upon this disease have led him to the following conclusions, first, that "gangrene of the lungs appears to be more frequent in childhood than at any other period of life. Secondly, it is *essentially* of the *same nature as those other forms of gangrene* that are *developed spontaneously or under the influence* of *putrescent fever.* Thirdly, in the child, gangrene, when it affects the lung, is *rarely limited to this organ;* usually *several other parts of the body* are *similarly affected at the same time.* Fourthly, (7) local causes, such as inflammation, the existence of tubercles, &c., do not seem to *have any direct influence on the production of pulmonary gangrene.*" –

This species of disease may show itself in a milder form, as an erysipelas upon the skin. This was observed by Dr. Riberi,‡ of Turin, "who, in describing a hospital gangrene in the hospital of San Giovanni in that city, during the years 1817–1820, tells us that it often alternated from a sphacelating to an erysipelatous inflammation, the latter appearing as the former began to cease on the return of a cooler or drier air, or where both coexisted, the slighter or erysipelatous affection being limited to the more robust patients, or those who were fortunate enough to lie in the best ventilated parts of the sick wards."

Another affection which we regard as identical in character is the gangrene of the mouth of children, usually occurring about the period of dentition, and heretofore described under the names of gangrenous *stomatitis* or *gangrænopsis*, *cancrum oris*, *sloughing phagædena* of the mouth, *gangræna oris*, *cancer aquaticus* or *water canker*, &c. "This disease§ commences with a purple spongy appearance of the gum, either of the upper or lower jaw; to this state speedily follows ulceration, which eats deeper and deeper until the alveolar processes are quite exposed. The ulcerated surface is much disposed to bleed, so that its character is often with difficulty ascertained. In severe cases the ulceration rapidly pased into a state of gangrene and sloughing, and these morbid changes extend from the gums to the lips and inside the cheeks. The diseased surface becomes quite black, the teeth drop out, the jaw-bone becomes carious and even the *tongue may become partially destroyed.* In some cases the disease commences in the lips or cheek, and extends thence to the gums. The accompanying constitutional symptoms are usually an irritative feverishness and a greater or less degree of diarrhœa, which quickly reduces the young patient's strength and carries him off." This gangrene may attack any of the tissues of the economy. It is said‖ to be most common in the mouth, the pharynx, the lungs, and the skin, but wherever it occurs it must be looked upon as the *same disease.*

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* Med. Chir. Rev., Oct., 1836, p. 509.

† Am. Journ. Med. Sciences, No. 16. N. S. p. 485.

‡ Good, op. cit., vol. iii. p. 493.

§ Med. Chir. Rev., Oct., 1837, p. 527.

‖ Vide Review Bouchut, Rilliet and Barthez, On Diseases of Children, Med. Chir. Rev., July, 1845, p. 102.

As belonging to this type, we would enumerate the various cases of *softening* or *ramollissement* of the tissues. "Drs. Klaatsch and Hesse have attempted (and I think rightly) to prove that the gangrene affecting the gums and soft parts surrounding the mouths of children is to be attributed to a decomposition of these textures *similar* to *that which occurs* in *softening* of the *stomach, uterus, and other organs* independent of and altogether unconnected with true gangrene."* I can see no reason except in the colour of the parts, why this softening should not be regarded as true gangrene. It is evidently a partial or total decomposition of the tissues affected, similar in every other respect to that which occurs in gangrene. There is, also, a form of true gangrene of the external surface, which, from the pale appearance of the skin and other parts involved, has been denominated "*white gangrene.*" A case of this kind has been narrated by Dupuytren† in the *Revue Médicale*, and occurred at the Hotel Dieu, in Paris. Mr. Mayo says in regard to the disease, "white gangrene is an affection of the skin in which, without any assignable cause or preliminary symptoms, patches of skin of the area of one, two or three square inches suddenly die. It occurs sometimes on the breast. In the Museum of King's College there is a model of white gangrene in which the disease attacked the arm; several patches of cutaneous gangrene successively formed; the sphacelated parts were *white from the commencement* of the process to their separation, when healing and healthy granulating sores were left."‡ An interesting case of this kind occurred in St. George's hospital in September, 1830, and is detailed in the *Med. Chir. Rev.*, April, 1836, p. 341.

Dr. Abercrombie has related a very interesting case of what he calls "*black ramollissement* of *the liver*," which his reviewer says "is unquestionably not the *result* of *any inflammatory action;* it is more *allied to gangrene.*" And a case of white softening of the brain has lately been reported by Dr. Todd§ in the *Medico-Chir. Transactions*, "in which its *analogy* to senile gangrene *is very distinctly shown.*"‖ How far the author may be correct in attributing the disease to an arrested flow of blood through the right carotid in consequence of a dissecting aneurism of the aorta, I will leave others to judge.

Gastromalacia, or *ramollissement of the stomach*, is another form of softening which we consider as belonging to this species. "There are various degrees of this morbid process. In the first the mucous membrane is found to break or tear across whenever we attempt to raise it with the fingers or forceps. In the second the softening is so much greater, that by merely scraping it lightly with the edge of the scalpel, it is converted into a soft, opaque, creamy-looking pulp; and in the third extreme degree it is so loose and soft that a stream of water is sufficient to detach it from its subjacent connections. In this last stage portions of the mucous membranes are found on dissection partially or entirely destroyed, and the submucous cellular tissue is laid bare in irregular or round patches of different sizes."*

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* Am. Journ. Med. Sci., No. xli. p. 205.

† Am. Journ. Med. Sci., May, 1835, p. 228.

‡ Rev. of Mayo's "Outlines of Human Pathology."

§ Ranking's Abstract, vol. i. p. 204.

‖ This disease is considered, by Rostan and others, as a peculiar change *not of an inflammatory character.* Dr. Abercrombie supposes that it may be sometimes the result of inflammation, and at other times consist in a change *resembling mortification* in *the other tissues,* and arising from disease of the arteries. *A similar view is taken by Dr. Carswell.* Vide M. Hall's "Practice of Medicine," p. 421, and Examen des Doctrines Med., vol. iv. p. 654, et seq. Ollivier mentions gangrenous eschars as being common in ramollissement of the spinal marrow.—Ibid., vol. iv. p. 748.

Various causes have been assigned for this degenerescence. Dr. Carswell says, "that it depends on the chemical action of the gastric juice." This seems to have been the opinion of John Hunter, who published a paper in the "*Philosophical Transactions*," on the "digestion of the stomach after death." Dr. J. Gardiner believed it to be owing to the action of "the fluids contained in the stomach and intestines," but that it took place also "in consequence of a *peculiar disease* of the canal whereby portions of it are rendered more easily soluble by the action of its contents." A different view has been taken of it by some of the best German and French anatomists. Cruveilhier and Louis regard it as being "a *peculiar diseased alteration* of the *affected tissue*," and the *Med. Chir. Rev.* has the following passage:—"That this morbid process takes place without preceding inflammation is admitted by all the best writers, but whether it is always the effect of the solvent power of the intestinal juices, or occasionally the result of an idiopathic and vital process is not definitely settled. Andral leans to the *latter opinion*, and thus confirms the views of Cruveilhier and Guernsent, and of the German anatomists." What else can be this *peculiar diseased action* but a progressive transformation of the tissues, effected by the putrefactive fermentation?†

The last disease which we will mention in this connection is the anthrax or carbuncle. This is senile gangrene in another form, and the only difference consists in the circumstances in which the patient is placed and his previous state of health. The chief feature of this painful affection is the gangrenous state of the subjacent cellular tissue. The malignant pustule is evidently the same thing, and is brought on by the introduction into the system of animal matter in a state of transformation or putrefactive fermentation. Hence, slaughter-men, tanners, fell-mongers, tallow-melters, &c., are peculiarly liable to the disease.

With regard to the nature and cause of malignant pustule, M. Bourgeois‡ remarks:—"The disease is essentially of a gangrenous and septic character, and is the result of direct absorption of an animal poison into the system. This poison seems to be generated in the bodies of most of our domestic animals, at least in those which are herbivorous, as in the sheep, ox, horse and ass; and is capable of being transmitted by direct contact to mankind." He thinks, also, that the poison may be conveyed from the sick animal to man by insects, and that the hair or wool of an animal who has had the disease, will retain the poisonous matter for a great length of time, notwithstanding they had been washed. He says he saw a man

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* Med. Chir. Rev., July, 1837, p. 216.

† We deem it unnecessary to investigate in detail the various groups of symptoms which may arise from this morbid process according to the organs affected, and the functions disturbed in its course, as these may readily suggest themselves to the mind of the reader. Softening of the brain may show itself in symptoms truly typhoidal, and be considered typhus, or it may put on another form and become an *apoplexy*; of the spine, as tetanus or some form of paralysis; of the stomach, as an irritative fever, or gastritis, and dysentery, &c.

‡ Med. Chir. Rev., Oct., 1843, p. 485. See also an interesting paper on the subject by Dr. Pennock, Amer. Journ. Med. Sci., for Nov., 1836, in which, he says, this disease bears "*a striking analogy to dry mortification.*"

"who seemed to have caught the disease by *handling the horse hair taken out of an old sofa.*"

We come now to the subject of suppuration, and, in deference to common usage, we will consider under the head of inflammatory types, one species of disease attended with this result. We will confine ourselves here, however, to a mere notice of this diseased type, reserving, for our succeeding division, some remarks upon the general subject. We wish it however, to be understood, that the explanation which we may give of the mode of formation of pus and the process of suppuration, is entirely applicable to the present case.

The type of this disease is phlegmonous inflammation or common phlegmon. This inflammation is, for the most part, confined to the cellular tissue, and has been, heretofore, regarded as the type of all inflammatory diseases, but if our postulate be granted, that the formation of pus is a specific termination of a disease whose tendency from the beginning was to such a result, it surely cannot belong to either of the species above described. Andral,* I am aware, controverts what he has called the dogma of Tommassini, "that a disease commenced with one diathesis cannot change it during its course," and attempts to show "that inflammation, the essence of which is to make the blood more consistent by increasing its fibrin, may bring about, remotely, the liquefaction of the blood by the destruction of its fibrin," and its conversion into pus.

This view of morbid transformations is unsupported by any analogy in the transformations effected in different substances out of the body. Diastase in contact with starch or dextrin produces an action which transforms them into sugar and nothing else. The action of synaptase upon amygdalin results in the production of peculiar products which are invariable. Yeast converts sugar into alcohol and carbonic acid, and is limited to this result. Why then should we believe that a morbid agent in its action upon the blood first transforms proteine into an excess of fibrin and then the fibrin into pus globules?

The pathognomonic symptoms of this disease are a fever of an inflammatory character, if any; an increase of fibrin in the blood, but moderate; the exudation of blood plasma by which a sac is formed, and the pus is confined. The pus laudable, with no disposition to cause ulcerations, or infect by contagion, and when discharged, the abscess readily incarns.

The disease, I believe, to be of a constitutional character, and to depend on, or, at least, to be intimately connected with, a transformation of the fibrinous parts of the blood into pus. This is certainly an elementary feature. If this be admitted, it seems to follow, as a matter of course, that in whatever part of the body it may seat itself, it should be regarded as essentially the same disease. In what can an abscess, with the above characters, of the liver, for example, differ from an abscess of the brain or lungs? To show, however, the great disposition of systematic authors to multiply, unnecessarily, species of disease, we need only refer to Dr. Good, who has made of suppurative tumours no less than three genera, and sixteen distinct species; besides the cases where suppuration takes place as a supposed result of that inflammatory action, distinguished by the term *empresma*.

It is needless to enumerate the different seats and forms of phlegmon. The above characters will sufficiently distinguish it wherever located. Suffice it to say, that it must never be confounded with the gangrenous species of disease, to which it makes a near approach in the *furuncle* or

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* Op. cit., p. 90.

hyma, nor with those suppurative diseases induced by a specific contagion, ıch as the *bubo*, nor with those extensive depositions of purulent matter hich seem to be connected with a scrofulous condition of the system, and rm the most of the species under the genus *apostema* of Dr. Good, of hich we will treat in our next general division.

Purulent types.—The nature of pus and its mode of formation are uestions which have not yet been satisfactorily determined. The diffiulties in regard to its true characters may probably arise, in a good degree, rom the fact that the term has been applied to morbid products which are ssentially different, at least, in a pathological point of view. There can e no doubt that there are many diseases specifically distinct which result n this formation, and that this fluid has, under such circumstances, a very ifferent effect upon the system when introduced, or in any other way aplied to it. Who can believe that the bland, inodorous, innocuous fluid owing from a healthy granulating surface or collected in a simple phlegıon, is not specifically different from the corroding matter of a syphilitic hancre, or the contagious matter of a variolous pustule! and yet they are ll considered as *pus*, and may have the same external appearance, and ossibly, the same chemical reactions. The diseases which produce them, owever, are evidently distinct, and the morbid action of the fluid effused s also very different.

From these facts it follows, then, that pus must differ in its chemical and hysical *properties*, and consequently *may* differ also in its chemical and hysical *constitution.* We know that two bodies or substances may have he same physical properties and a different chemical composition, or the ame chemical composition and different physical properties, or, in other vords, they may be *isomorphic* and not *isomeric*, or *isomeric* and not *isonorphic.* The only evidence we can have of the perfect identity of any wo substances is, that they are both *isomeric* and *isomorphic.* Simply *somorphic* or *isomeric* products of two diseases cannot, therefore, establish heir identity, but if those diseases should result in products which are oth isomorphic and isomeric, they must be considered as *isopathic*, no natter how they may differ in their seats and symptoms. The identity, herefore, or dissimilarity of diseases may be determined by determining he physical and chemical nature of the morbid products. This is to be ıchieved by chemistry and the microscope, but we are sorry to say that as et, we have not advanced far enough in this study to accomplish this end vith perfect success.

It was the opinion of Boerhaave, Platner,[*] and most of the older writers, hat pus consisted in "a dissolution of the blood-vessels, nerves, muscles, ınd other solids, in the fluids of the parts in which inflammatory tumours occur." This opinion, however, we believe is upheld by no well-informed physician of the present day. M. Gendrin[†] supposes that the "globules of pus are those of the blood deprived of their colouring matter and somewhat enlarged and deformed." Dr. Hake[‡] seems also to believe, that in certain cases, pus may be nothing more than "a degradation of the blood globule." Dr. Hodgkin, Mr. Liston,[§] MM. Magendie,[‖] and Andral[¶] think, on the contrary, that the globules of pus and of blood are totally dissimilar. Andral says, "I cannot admit, as has been maintained by some, that the globules of pus are a transformation of those of the blood. Nor is the pus formed at the expense of the serum, the albumen of which is found unchanged, the pus being merely suspended in, without being, in the least, confused with it. May not, then, the pus globules be nothing more than a modification of *fibrin*, which instead of reaching the net-work form has remained in the serum, in that state of granular corpuscles whose origin and nature I have already pointed out?" Mr. Carpenter* supposes that pus is produced by a transformation of the "*exudation corpuscles*," which are found in the fibrin after being effused and exposed to the contact of the air.

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[*] Bell on Ulcers, p. 55.

[†] Hall's Practice of Medicine, p. 110.

[‡] Med. Chir. Rev., Oct., 1839, p. 353.

[§] Hall, op. cit., p. 110.

[‖] Leçons sur le Sang.

[¶] Op. cit., p. 83.

From experiments performed by Mr. Addison† on pus, he has been led to believe in the identity of pus-cells with the white corpuscles of the blood. By the action of liquor potassæ the pus-cells were ruptured and transformed into a substance having all the appearance of "*fibrous tissue or of mucus.*" By the action of dilute acetic acid upon this fibrous coagulum of pus the pus was changed into "*an opaque, white, friable substance resembling tubercle.*" These experiments are interesting, and prove the intimate relation "between the plastic element of the blood and the elements of pus and tubercle, but we do not see that they add much to our knowledge of the exact nature of that relation, since we have no reason to think that the process of transformation by the agency of liquor potassæ and acetic acid is identical with that which takes place in the living body, but only bears a certain degree of *analogy* to it."

The advocates of the various theories which have been advanced in regard to the *mode of formation of pus* may be arranged as follows:— Those who suppose it formed from the fluids *after extravasation into th inflamed parts;* those who suppose it formed in the *capillary vessels*, an by the *action of those vessels;* and lastly, those who suppose it *forme* DIRECTLY IN THE BLOOD.

The experiments of Sir John Pringle and Mr. Gaber led to the belief tha pus was formed, in the language of Benjamin Bell,‡ who adopts the opinion, by "a change produced by a certain degree of fermentation upon th *serous parts* of the blood after its *secretion into the cavities of ulcers an abscesses.*" This opinion has been very generally entertained, and althoug differently expressed, has recently been advanced by Travers and Bennett in their respective works on inflammation. Mr. Travers says, "pus I believe to obtain its characters of consistency, opacity, and colour, *after exudation*, and to consist of the superfluous or waste lymph which has *bee separated*, during the adhesive stage, from the mass of the blood held i solution by serum, being thus a chemical modification of the constituent of the liquor sanguinis; in short, the latter fluid deprived of its origina characters and property of spontaneous coagulation. Pus particles resemble those of lymph seen in the vessels under inflammation, except that the appear broken down and partly dissolved in their texture, instead of compac and of less regular figure; and if, when suspended in a drop of fluid, compared with the elastic blood corpuscles, to which they bear no analog whatever, utterly inert and devitalized. We never see pus in the blood vessels but in fatal phlebitis, and if introduced into the circulation by injection, it is destructive to life." In relation to this theory, I would merely observe, here, that I believe there is a form of pus or purulent matter which may be produced in this way, as, for instance, in an open, healthy granulating wound; but that the blood-vessels never contain pus except "*in fatal phlebitis*," we hope to show, hereafter, is contrary to the observations of many high authorities.

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* Principles of Human Physiology, p. 456.

† British and Foreign Med. Rev., for July, 1845, pp. 122, 123.

‡ Treatise on the Theory and Management of Ulcers, p. 55. By "serous parts o the blood," is here meant serum with more or less coagulable lymph or "liquor sanguinis."

§ Review of Travers and Bennett, in Med. Chir. Rev., vol. xlvi. p. 102.

The next opinion, alluded to above, is that which refers all suppuration to a secretory action of the vessels of the parts inflamed. This opinion was first advanced by Dr. Simpson, of St. Andrews, in the year 1722. De Haen announced a similar opinion in the year 1756, from having observed an expectoration of pus in persons affected with phthisis "in whom after death, no marks of ulceration could be perceived, not even the place in which the pus had been formed." This view was adopted by Hewson, Plenciz, Schroeder, Home, Cruikshank, Morgan, and John Hunter. There is, however, a wide difference in the idea attached to this secretory process by these different writers. While Simpson and De Haen, as I imagine, suppose the vessels to separate or secrete a matter already formed in the blood, Hewson, Hunter, and others, have assumed for the vessels themselves, a *new power*, by which they convert the coagulable lymph into the matter of pus. De Haen, in the language of Carswell, "was led to believe that pus, in the cases above alluded to, was immediately secreted from the blood, and adds, that although the blood appears to be a homogeneous fluid, yet it is manifest, that there is something in it, when collected, which is of a tenacious consistence, of a whitish or yellowish colour, and which might *be called the matter of pus*." Hunter,* on the contrary, maintained that this process was effected by the *powers of the arteries alone*. "Pus," says he, "is not to be found in the blood similar to that which was produced in the first stage, but is formed from some change, decomposition, or separation of the blood, which it undergoes in *its passage out of the vessels*, and for effecting which the *vessels of the parts have been formed*, which produces a subsiding of the inflammation from which it took its disposition; hence, it must appear that the formation of pus consists of something more than a *straining of juices from the blood*."

This doctrine as maintained by Mr. Hunter, has been, for the most part, embraced by all the *vitalists* of the past and present day. Reasoning, however, *à priori*, it is difficult to conceive how the simple mechanical action of dilatation and contraction, which is all that can be allowed to belong to *the vessels alone*, can effect an alteration in the fluids except in the separation of principles *already existing in them*, and again in his view of this action there is no analogy in the secretory or excretory acts of the economy as now understood. All the secretions† and excretions are now known to be principles already existing or produced from transformations effected in the mass of the blood,‡ and eliminated by means of the glandular apparatus, so that in truth the word secretion now possesses its original meaning of *separation* and not *creation.* If, then, we consider the inflamed part as acting the part of a gland, it only separates particles already *transformed* or *in the act* of *passing into pus.*[*]

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* On the Blood, p. 138, vol. ii. † Carpenter, op. cit. pp. 508, 509.

‡ Liebig supposes that the organized tissues are subject to transformations, and he seems to believe that "the animal secretions must of necessity contain the products of the metamorphosis of these tissues."—(*Animal Chemistry*, p. 126.) It is time, I think, that this Pythagorean dogma was abandoned. There is no good reason for believing that there ever is any change or metamorphosis of the elementary parts of the animal tissues after organization. After the complete growth of the body is effected the fibrin of the blood is of no use in the organism except to repair solutions of continuity or be converted into the secretions. Metamorphosis, therefore, must be confined to the fluids or substances deposited in the tissues.

But farther, the fact of extensive purulent deposits taking place in the body without any previous symptoms of inflammation, as in cases of chronic or cold abscesses and metastatic or secondary abscess, offers a great drawback to the entire correctness of this theory. Mr. Hunter was aware of the difficulty, but got over it by declaring that the matter effused in such cases was not true pus. Others, however, have contended that there was, even here, a previous inflammation. This is the opinion of Morgagni, Boyer, Rose, Lawrence, Cruveilhier and Mr. Travers. While Chaussier, Marjolin, Ribes, Velpeau, and others are found arrayed upon the negative side of the question.[†] Mr. Travers[‡] says, "the suppuration in diffused cellular inflammation, in cold abscesses after typhus and other cases of constitutional exhaustion, as especially erysipelas and animal poisons, are the cases which appear to authorize the belief that pus may be formed independently of adhesive inflammation. But it is my belief that in these cases the effused fibrin dies before its organization is accomplished, as granulations perish in certain ulcers. . . . . It is, therefore, no pathological exception, unless, indeed, an exception establishing the rule, since the same order of actions is preserved, but the constructive are cut short or overpowered by the destructive from the diseased state of the blood and the general habit. . . . . The phenomenon of late years brought under the notice of pathologists of what are called *secondary deposits*, and of which I have seen many examples, require only to be referred to here. So far as the question whether inflammation be indispensable to the production of pus bears upon such cases, I consider *them to form no exception* to the *universality of this law.*" It is with diffidence that I dissent from the statement of an authority so high, but from my own observations and the statements of others, I can have no doubt that in many of these cases there is not the least trace of what is commonly understood as inflammation, to be observed either before or after death.

But a still greater difficulty presented to the advocates of this exclusive theory, is, that since the blood in diseases has come to be more carefully studied, it is found in many instances vitiated by pus. De Haen long ago admitted that "*pus might be found* in the *blood* in *certain circumstances,*" and the fact is now established beyond contradiction. Mr. Gulliver[§] and others have detected it in many cases of disease. This condition of the blood is now commonly known as "*purulent infection,*" or "*purulent diathesis,*" and M. Piorry has applied to it the appellation of "*pyohemic,*" or "*entorrhée pyohemique.*" This difficulty has been met, however, by supposing that in all such cases there either existed an inflammation of a vein from which the pus was effused or the existence of purulent depôts from which it was absorbed after it had been formed. In the case of "*secondary abscesses,*" MM. Blandin, Dance, Arnott, Cruveilhier, and many others adopt the former view, Marechal, Legallois, and Rochoux the latter. To the first mode of explanation it may be replied, that in many cases of the kind no phlebitis can be detected. M. Velpeau* says, "For my part I feel convinced that inflammation of the vein does not constantly exist, but that the affection (metastatic abscesses) may be produced either as a consequence of phlebitis or of simple absorption. . . . How often have I found large collections of pus in the viscera without being able to detect the *slightest trace of inflammation in* any *part of the venous system?* Upon this point *I am positive*, having *determined* it *so frequently* by the *most careful examination.*" He gives it as his opinion that in these cases the "pus may be introduced into the torrent of the circulation either by the lymphatics, the veins which open on the wound, or by imbibition." But to this opinion is opposed the fact, universally admitted by all microscopists, that the pus globules are from two to four times the size of the blood globules, so that the introduction of the former into the blood *in this way* is rendered *a physical impossibility.* Andral† having, by his observations, arrived at the conclusion that "the presence of pus globules in the circulating fluid is a fact that can in no wise be contested," says that in some cases "there was nowhere the least trace of phlebitis," and in regard to absorption, "it is not easy to understand how such large globules as those of pus can penetrate in mass by a sort of endosmosis through the coats of the vessels; at the most they could traverse them only in fragments, and, as it were, in ruins." And to the same effect Magendie,‡—"Le volume des globules du pus étant constaté par tous les micrographes, nous avons le droit de douter, jusqu'a preuve contraire, de la resorption de la matière purulente au moyen des capillaires veineux, resorption qui ne nous semble pas admissible a cause des conditions physiques dans lesquelles se trouvent les tubes d'une côté, et de l'autre les molécules qui doivent les parcourir." But to render the evidence still more convincing, a case has been reported by M. Duplay§ which occurred at the hospital de la Pitié, under the care of Professor Rostan, of a female in whom the blood appeared to have undergone a complete purulent decomposition, and upon dissection no trace of "*phlebitis, metritis, or purulent cavity in any part*" could be detected.

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[*] Mr. Earle has recently controverted this doctrine of Mr. Hunter in regard to the formation of pus, and seems to think that it is not a secretion as he understands the term, but a mere mechanical separation of some component part of the blood, most probably the red globules deprived of their colouring matter. The manner in which they are converted into pus, however, does not appear. (Vide an interesting paper by Martin Paine, on the Theory of Inflammation, Am. Journal, May, 1838, p. 69.)

[†] Vide a paper by Dr. Nasse, of Bonn, "On Secondary Abscesses," Med. Chir. Rev., April, 1836, p. 531.

[‡] On Inflammation.—Med. Chir. Rev., Jan., 1845, p. 103.

[§] Am. Journ. Med. Sci., Feb., 1840, p. 441.

These and such like facts have led some pathologists to adopt, with such modifications as are consistent with the present state of science, the old humeral notion that purulent matter is formed in the blood and is secreted either in its complete or *nascent state* into abscesses, wounds and ulcers. This, as we have seen, was the opinion of De Haen. Mr. Carswell,‖ although he defends the doctrine of Hunter to a certain extent, yet distinctly says, "there is, however, another mode, which to a greater or less extent, is, perhaps, always in operation at the same time with the former, but which under certain circumstances is effected alone. I allude to the formation of pus in the blood under circumstances in which the influence of the capillary system, as exercising a function of secretion, can have no part. . . . From all these facts it must be evident that the capillaries can have no share in the purulent transformation of the blood in the examples we have brought forward of this change, and therefore it follows that the formation of pus cannot be restricted to a morbid process induced in the vessels by inflammation and the subsequent separation of this fluid from the blood."

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* Am. Journ. Med. Sci., N. S. Oct., 1841, p. 481.

† Op. cit., p. 83. ‡ Op. cit, p. 324.

§ Am. Journ. Med. Sci., May, 1835, p. 181.

‖ "Illustrations of the Elementary Forms of Disease,"—from Med. Chir. Rev., vol. xxviii. p. 28.

M. Tessier, however, seems to have taken the lead in endeavouring to establish the doctrine of an idiopathic contamination of the blood by pus by means of a peculiar "purulent diathesis," by which there is produced in the system "a tendency to the formation of purulent matter." This view of the subject was expressed in a memoir which was read before the Academy of Medicine. M. Blandin having been appointed to report upon it, "his report was unfavourable to the views of the writer." M. Blandin "professing his decided belief in the other view of the question, that which was proposed by John Hunter, and has been adopted by Dance, Velpeau, Cruveilhier, and many other well-known authorities." An epistolary correspondence* afterwards took place between them on a case which occurred at the Hôtel Dieu, under the care of Blandin, in which M. Tessier combats the doctrine that the pus is introduced into the blood from an inflamed vein, and boldly advances the opinion that "phlebitis, the alteration of the blood by the pus, and the formation of metastatic abscesses are consequences of a peculiar disposition or diathesis of the affected patients, pre-existent to those alterations, and which, once developed, becomes the cause of the purulent secretion of the vessels, viscera, and cellular tissue, and is outwardly manifested by certain peculiar characteristic symptoms." "The mechanical physician," says he, "has taught that the introduction of purulent matter into the circulation is the cause of those changes in the blood, which usually take place in cases of the purulent diathesis. On the contrary, I have shown that these changes represent the phases of the purulent transformation of the vital fluid under the influence of the fatal diathesis." M. Andral appears to me to lean to the same opinion. In the fourth volume of his *Clinique Médicale* he holds the following language: "Peut-etre l'époque n'est elle pas éloignée où l'on reviendra à cette idée de De Haen, qui admettait que dans certaines circonstances le pus peut se former de toutes pièces dans le sang comme on voit *se former l'urée dans l'état physiologique.*"

Raciborski† has recently advanced the same opinion, and has undertaken to explain the production of the pus upon the principles which have been furnished by the admirable researches of M. Liebig. After alluding to the action of yeast upon sugar, he says, "may not something akin to this take place when a portion of purulent matter in a state of decomposition is brought into mere contact with the blood? and may not the entire mass of the circulating fluids in this manner undergo a certain change as we daily see take place in the fermentation of large quantities of vegetable juices when the minutest quantity of leaven is added to them?"

"It has usually been too much the case with pathologists to ascribe the alterations, which are met with in the veins of those who have died from suppurating wounds, to an inflammation of the parietes of those vessels. But I am persuaded that, in very many cases of this sort, the pus that is found in the interior of the affected veins, is no more the direct consequence or result of a phlebitis, than is the deep red colour of their lining membrane so frequently seen in fatal cases of typhus fever."

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* See a Review of this controversy in Med. Chir. Rev., vol. xlii. p. 223, et seq.

† Am. Journ. Med. Sci., N. S., Jan., 1844, p. 215.

"In support of this opinion, I might allude to the accidents which are apt to follow dissection wounds. In these cases, all the phenomena, from the earliest local symptoms observed during life, to the most serious anatomical lesions discoverable after death, might seem to justify the appellation of phlebitis—which has been usually applied to this state; and yet, what is more manifest than that there is a primary alteration of the blood under the influence of a fluid in a state of decomposition?"

This, or some similar mode of accounting for the formation of pus, appears to me to comport most closely with the facts which have been observed in regard to this process, and it is the one, upon the whole, which we are most inclined to adopt. But whether it arise from a *fermentation or zymotic action* produced by the introduction of a putrid poison into the system, or from *mal-assimilation on the part of the nutritive apparatus*, we still regard it as highly probable, if not absolutely certain, that the formation of pus is, in most cases, a *constitutional disorder;* that *a disturbance* of the blood *is a primary phenomenon*, and the local *symptoms of inflammation*, such as the dolor, color, rubor and tumor, *are entirely secondary.*

In the diseases which we are about to consider, under this head, we regard a purulent diathesis, or tendency to the production of pus, as an essential feature, and we believe that this alteration begins in the blood. Pus globules, may not, in all cases, be detected in this fluid while in the torrent of the circulation, and yet they may exist there in a *nascent*[*] state, and may be supposed to assume their proper form either in passing out of the vessels or after they have been actually extravasated. This disposition characterizes, however, several other diseases, one of which, the common phlegmon, we have already noticed, and others shall be treated of under the head of *exanthematous types.* We propose, in this place, to speak of two forms of disease, which, although allied in several particulars, we must regard as distinct species.

The pathognomonic symptoms of our first species are, fever of an adynamic or typhoidal character, the existence of purulent matter or the *materies puris* in the blood, deposition of pus in various parts of the body, disease, for the most part acute, and disposed, under favourable circumstances, to spread by contagion.

The following affections we would refer to this species, and we will now attempt to point out their isopathic connection.

This essential fever, to which we would apply the term "pyogenic," of Voillemier, sometimes manifests itself in that form of disease known as *phlebitis.* This disease was first described by Mr. John Hunter many years ago, but very little attention seems to have been paid to it until of late, when, as we have seen, it was appealed to by the pathological anatomists, as a mode of explaining the purulent infection of the blood, and those metastatic or secondary abscesses which take place in various parts of the system after amputations or other surgical operations. We need not enter into a description[†] of the disease further than to say, that one of its most important features consists in the disposition to the formation of pus. It is said to occur either from injuries done to the veins, or spontaneously. Dr. Chapman says, "it very rarely happens that it originates spontaneously." It most commonly proceeds from some injury done to the vein. It sometimes, however, originates from the most trifling exciting cause. "The slightest incision or puncture or *even a scratch will lead to the most disastrous results of this nature from the cleanest instruments.*" This proves conclusively that there must exist, in such cases, a constitutional predisposition produced by some cause of which we are ignorant. That predisposition, I must believe, consists in the "*purulent diathesis*" of M. Tessier.

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[*] Our idea can be very well illustrated by having recourse, for one moment, to the doctrine of cell-formation. Supposing that the globules of pus or pus cells are derived from the elements of the blood, they may exist in the circulation as cytoblasts or cell-germs, or even in the form of alternate granules, and be formed after exudation.

[†] For an excellent description of this disease, I would refer to a paper on the subject by Professor Chapman, of Philadelphia, in the number for July, 1843, of the Amer. Journ. Med Sciences, p. 13.

The almost constant association of this disease with *secondary abscess*, is a clear demonstration of *their perfect identity*,—and we proceed to give the observations of different writers upon this point. This coincidence is, indeed, so common that it has induced some pathologists to attribute the secondary abscesses, in all cases, to the previous existence of phlebitis. This, as we have seen, was the opinion of such men as Blandin, Dance, Arnott and Cruveilhier. So convinced is M. Blandin* of this necessary connection, that in those cases in which the phlebitis cannot be detected in the soft parts, he directs to the examination of the "*veins of the osseou texture*," under the impression that the disease may have its origin there. Dr. Nasse,† of Bonn, says, the results of very numerous dissections have satisfied him "that *phlebitis* in some part of the body, and most generall in the immediate vicinity of the original disease, is, in the majority of cases an accompaniment of secondary abscesses. Often, when this morbid appearance has not been discovered, he is of opinion that it might have bee so "*had the blood-vessels of the bones been minutely examined.*"‡ Mr Douglas§ says, "in every case of secondary abscess above detailed, whic I dissected since I met with the inflamed vena portæ, I have been able t trace inflammation of the minute veins of the part," and the followin seem to be the facts established by his observations, first, that "phlebitis i the invariable cause of the secondary abscesses," and secondly, "that thos secondary abscesses are themselves the result of a secondary phlebitis the inflammation being seated in the venous radicles." We need not however, insist further on this point. The frequent association of the tw conditions is acknowledged by all who have paid attention to the subject We conclude, therefore, our remarks upon it, by the following extract fro the *Med. Chir. Review* for April, 1833, p. 404, a *work to which we fee ourselves very greatly indebted.* "With reference to the co-existence c phlebitis and the purulent deposits, it seems to us that we may venture o the following conclusions. First, that the symptoms of phlebitis and th purulent deposits are *very similar, if not identical in kind.* Secondly that in a considerable number of cases, phlebitis and the purulent deposit are found by examination after death, to co-exist. Thirdly, that in man cases, a careful inspection can detect no traces of phlebitis, while the puru lent deposits are present. Fourthly, that in many cases, phlebitis exist without the purulent deposits." We believe that this is sufficient evidence of the mutual convertibility of these two affections, and, of course, of their *isopathic connection.*

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* Med. Chir Rev, April, 1838, p. 548 † Ibid., April, 1836, p. 538.

‡ This preconceived notion of the necessary existence of a certain phenomeno as a cause of another, is a great bar to correct observations upon any subject Me who look *for a thing*, will be almost sure to find it, and it may not be considered u charitable to suppose that the advocates of phlebitis, as a cause of secondary a scesses would be satisfied with the *least appearance of inflammation*, and could the but find in a vein a *red spot* no larger than that produced by a *flea-bite*, it would b called *phlebitis.*

§ Ibid., July, 1836, p. 268, et seq.

The next form in which this "pyogenic fever," or "suppurative," as it has been called, may manifest itself, is *erysipelas.* By erysipelas here, we of course mean an entirely distinct disease from that already spoken of under the head of "*inflammatory types*," although we believe that these forms may show themselves, in some cases, so nearly isotypic as to be with difficulty distinguished. It may be superficial or deep-seated—cases of which are noticed by Dr. Corbin* in a paper published in the "*Journal Complementaire*," or it may be external or internal. Dr. Warren, in his excellent work on tumours, pp. 255, 356, after giving an account of an operation after which the patient died unexpectedly, attributes the result to erysipelas, which was prevailing in the hospital at the time, and goes on to say "no cause we are acquainted with can so well explain this sudden and unexpected termination. Nor is such an occurrence new to me. I have seen numbers of patients perish in a few days after operations, at the time that erysipelas prevailed in the hospital, without the *slightest external erythema.* In such instances, I have been in the habit of stating that these patients died of erysipelas as truly as if they had been covered with an erythematous eruption. This disease is *constitutional.* It may affect the skin, and it generally does so. It may *affect the internal organs without affecting the skin*, and, in such instances, is most dangerous."

If the disease be slight there may be no evidence of the purulent infection; the erythema will be superficial, and the disease soon pass off. If, however, it prove more violent, it soon shows itself as *a purulent disease*, having all the characters belonging to phlebitis. Extensive suppurations take place in the subcutaneous cellular tissue or in some deep-seated organ. In the first case it is known as "*phlegmonous erysipelas*," "*diffuse phlegmon*," "*diffuse inflammation of the cellular texture*," &c. We believe that it will not be doubted that this latter disease is truly a form of erysipelas; the existence of these various forms in the same hospital, at the same time, during the prevalence of the erysipelas, proves their isopathic connection,† and it appears to me that whoever will attend to the history, progress, and termination of phlegmonous erysipelas and phlebitis, cannot fail to perceive that they are identical in their nature. The description so graphically given by Dr. Chapman, of phlebitis, corresponds precisely with that of those cases of diffuse cellular inflammation which I have have myself observed.

When this disease attacks the internal organs it may assume the form of Arachnitis. The sudden metastasis, which occurs of traumatic erysipelas to the head, proves that the brain may become the seat of the affection. Dr. Chrestien‡ of Montpelier, mentions "a case of erysipelas of the leg disappearing and followed by delirium, which was subdued by calling the eruption to its primitive seat by a blister. A similar case is recorded by M. Blandin." Mr. Nunneley§ has also described a form of Arachnitis which, he thinks, belongs to this type.

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* Amer. Journ. Med. Sci. for Nov. 1831., p. 205.

† Med. Chir. Rev., vol. xxvi. p. 162, vol. xxvii. p. 316.

‡ Ibid., vol. xl. p. 158.

§ A Treatise on the Nature, Causes and Treatment of Erysipelas. Am. ed., p. 10. This, like every other essential fever, may affect the peritoneal or mucous coat of the bowels, giving us enteritis or dysentery.

But I pass on to a more interesting form of disease, which I have long believed to belong to this species, I allude to "*puerperal fever.*" This disease has received the various appellations of "metritis," "puerperal peritonitis," "metro-peritonitis," "uterine phlebitis," &c. That it is the same disease as those we have alluded to above, appears to me to be susceptible of the clearest proof. In the first place, it is like them a disease whose anatomical character "*consists in the existence of purulent matter in some part or other of the body.*" So constant is this character, that it is to this disease that Voillemier has applied the term "pyogenic fever," par excellence. Dr. Nonat* has found the pus, in these cases, in various parts of the system. In some, it was deposited in the substance of the uterus. In others, it was found in the veins and lymphatics; again, in the cavity of the peritoneum, and even in the tendinous sheaths of the forearm, in the lungs and mediastinum. M. Tonnellé supposed that this disease was "connected with the circulation of pus in the veins." Dr. Ferguson† generalizes this proposition, and supposes that it "originates in a vitiation of the fluids." In an epidemic of puerperal fever which appeared in the Parisian hospitals‡ in 1843, the post-mortem examinations uniformly revealed the existence of pus in some part. The lymphatics of the uterus or its appendages were, in some, filled with pus. Sometimes the ovaries or Graafian vesicles, or peritoneal cavity, or cellular tissue of the pelvis, were the seat of purulent matter.

But in the second place, they *co-exist at the same time, and under th same circumstances.* Dr. Gordon§ in his *Treatise on Puerperal Fever*, p. 48, says, "that the puerperal fever is of the nature of erysipelas, was supposed by Peautau forty years ago, and has been the opinion of Drs. Young and Home of Edinburgh, since that time. I will not venture positively t assert that the puerperal fever and erysipelas are precisely of the sam specific nature, but that they are connected, that there is an analog between them, and that they are concomitant epidemics, I have unquestionable proofs. For these two epidemics began in Aberdeen at the same time and afterwards kept pace together; they both arrived at their *acme* together, and they both ceased at the same time." This is the testimony o Hey‖ and Ferguson,¶ and many others, and it is unnecessary to dwel upon the point.

But in the third place, a stronger proof of their identity is found *in th fact of their mutual convertibility.* It would require more space than w can at present devote to it to mention the numerous facts which suppor this proposition. A very few must suffice. "The same connection," say Dr. Gordon, op. cit., p. 49, "is evident from this circumstance, that a ver frequent crisis of the disease is by an external erysipelas, which is a pro that there is a metastasis of the inflammation from the internal to the external parts," and again, "this critical erysipelas is most commonly fixed o the extremities, but in a few instances on the external surface of the abdomen, which happened in a case of puerperal fever which I attended in 1788.' The following facts are narrated by Dr. Lee,** (who, by the way, is no believer in their identity,) which, says he, "may seem to prove that there i some connection between erysipelas and puerperal fever. In the autumn of 1829, a short time before the epidemic broke out in the British Lying-in Hospital, which led to its being closed for several months, two children died of erysipelas. Another fatal case occurred in the course of the epidemic, and on examining the abdomen I found the peritoneum extensively inflamed, with a copious effusion of sero-purulent fluid. Another infant was attacked with gangrenous erysipelas of the right forefinger, whose mother had died of uterine phlebitis. Mr. Blagden related a similar case to me. A midwife of the hospital had a severe attack of erysipelas of the face a few days after attending in labour a fatal case of inflammation of the absorbents and uterine appendages. During the prevalence of inflammation of the uterus among the patients of the same hospital in the winter of 1831 and 1832, two children died from inflammation and suppuration of the umbilical vein, and in both there were patches of erysipelatous inflammation on different parts of the body." Mr. Storrs,* of Doncaster, relates the following among many other interesting facts. "On Feb. 18th," says he, "I attended in labour a Mrs. Barret, of Cleaveland street, a neighbour of Mrs. Pearson, who did well, but her child was seized with erysipelas of the abdomen, from the navel to the genitals, of a gangrenous character, and died on Feb. 4th. Mrs. Pearson laid out this child, and was confined herself on Feb. 19th, attended by Mr. Loxley; she was seized with fever (puerperal) on the 21st, and died on the 24th. Her infant was sent out to a nurse at a neighbouring village, and was seized with erysipelas when a fortnight old, which also assumed a gangrenous character, and the infant died on 27th March. Another of the cases of puerperal fever was also incidentally connected with erysipelas, viz., Mrs. Briggs (case 8th). She was delivered, and continued on the same bed in which her husband had lain who had only just recovered from a severe attack of erysipelas and typhoid fever." But we have not space for any further extracts. Many more facts of the same import might be adduced. We would refer for further information on this point to a paper by Dr. Elkington, of Birmingham, published in the *Provincial Med. Journal*,† for Jan., 1844, also one by Dr. O. W. Holmes, in the *New England Quarterly Journal of Med. and Surgery*‡ for April, 1843, and to the account by Hall and Dexter of the erysipelatous fever of Vermont and New Hampshire, in the January number of the *Am. Journ. Med. Sciences*§ for 1844.

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* Med. Chir. Rev., April, 1838, p. 545.

† Ibid., April, 1839, pp. 462, 467.

‡ Am. Journ. Med. Sci., Oct., 1845, p. 509. See also a paper by Voillemier, i same Journal, Jan., 1841, p. 213.

§ Treatises on Puerperal Fever, edited by Meigs.

‖ Op. cit., p. 82.

¶ Med. Chir. Rev., April, 1839, p. 465.

** Op. cit., p. 281.

We conclude what we have to say on the subject of puerperal fever with the following extracts. "The *Provincial Journal* contains several papers in which puerperal fever is carefully reviewed by Dr. Blackmore, who subscribes to the opinion now very general, that it has in its more fatal form at least, the closest analogy to typhoid erysipelas. The same view is likewise taken by Mr. Symonds, to whom we are indebted for an excellent paper upon the subject, and by M. Storrs. Mr. Symonds, however, in acknowledging the erysipelatous nature of the epidemic fever agrees with the general experience of the profession, that there is a form of the disease *which is purely inflammatory*, and which, according to him, may attack all the tissues. The same writer speaks also of a third form, which he calls *remittent puerperal fever.* Mr. Storrs lays down the following propositions in relation to puerperal fever, that it is capable of imparting to any person not in the puerperal state by actual contact or close approximation, any of the following diseases, 1. *Inflammation of the peritoneum or other serous membranes, accompanied by a low type of fever.* 2. *Erysipelas, either local, such as arises from dissection wounds, or general, as on the face or person.* 3. *Typhus fever, with various accompaniments and in a variety of forms.*"[*] And to sum up in relation to all the foregoing diseases, Mr. Nunneley says,[†] "if it can be shown that the causes which produce them are the same, that by one form of affection another may be induced; that two or more forms of the complaint exist together, not only as epidemics but at the same time, or in some instances, interchangeably in the same individual, that some of them run so much one into another, that those who are most anxious to separate them are unable to do so; that the constitutional symptoms are for the most part the same; that, allowing for the variety in the organization and functions of the different textures, the local changes are the same; and that one plan of treatment is adopted for all: it may, I think, be fairly assumed as proved, that the affections *are identical in their nature,* at least according to all the rules of philosophy, *which forbid us to admit separations and distinctions* where *phenomena are the same.*"[‡]

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* Am. Journ. Med. Sci. for Jan., 1843, p. 224.

† Am. Journ. Med. Sci., April, 1844.

‡ Ibid., July, 1843.

§ See also papers by Mr. Storrs, in Am. Journ. for Jan., 1846, p. 245; by Dr. Peebles, ibid., p. 23; by Dr. Meeker, ibid., for July, 1844, p. 273; by Dr. Sutton, ibid., for Jan., 1844, p. 247; by Osiander, ibid., for Aug., 1839, p. 447; by Rognetta, ibid., for Jan., 1845; by Kneeland, ibid., for Jan. and April, 1846; Peddie and Ried in ibid., April, 1846.

This disease also presents itself at times under the form of typhus fever. That typhus or typhoid is a form of purulent disease, is shown from the fact that it frequently terminates in critical abscesses in different parts of the body,[§] and that it is connected with erysipelas is shown by its being attended at times with an erythematic eruption. Bouillaud says this eruption may be either "*papular, exanthematic,* or *pustular.*" It is known that M. Bretonneau has given the name of dothinenterite to the affection known as typhoid fever on account of the *furuncular or pustular character* of the inflammation of the small intestines, and particularly of the glands of Peyer and Brunner. M. Bouillaud[‖] considers this inflammation as *erysipelatous.* We have already alluded to the fact that Hildebrand regarded typhus as a specific exanthem, and that Dr. Roupell had adopted the same opinion.[¶] Among the serious complications of this fever, he mentions "*erysipelas, and suppuration, and gangrene,*" and he goes on to say, "during the prevalence of the epidemic in various years idiopathic erysipelas has been a very common and a very serious addition to other complaints in persons exposed, from their situation in hospitals and elsewhere, to the vicinity nd infection of typhus, and so common was it in the progress of the fever luring the present year, as well as during that of 1831, that no doubt ould be entertained *that it was essentially connected with and incident to his disorder.* Dr. Bateman noticed it in the house of recovery, and considers it an accessory disease. M. Louis observes that *shivering* rarely ook place in the course of the disease except to usher in some new alamity, such as erysipelas. It prevails at the *same time with typhus, is receded by the same symptoms,* and *arises amongst nurses or those in ttendance upon the patients ill with the fever.*" Mr. Storrs, in the paper lready referred to, establishes his proposition that *typhus fever, erysipelas,* nd *puerperal fever are* the *same disease,* by narrating several cases in which these diseases showed themselves to be mutually convertible. In he practice of M. Louis* six cases occurred in which erysipelas appeared n the course of the typhoid affection and in four of them extended to the subcutaneous cellular tissue, and it is a remarkable fact that in those cases here was but slight and partial alterations in the mucous membrane of the small or large intestines, proving that there was here a metastasis of the disease.

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[*] Am. Journ. Med. Sci., Jan., 1846. p. 245.

[†] A Treatise on the Nature, Causes and Treatment of Erysipelas.

[‡] Of the same nature apparently is the disease commonly known as Phlegmasia alba dolens, and by some pathologists it has been ranked with this species under the name of crural phlebitis, but there is such an intimate connection between this disease and the state of the mammary secretion, as has been stated by M. Gerardin, that I am inclined to view it as a kind of milk fever by translation connected possibly with a morbid transformation of caseine, but I am not satisfied about its pathology.

[§] Mr. Gulliver has detected pus in the blood of patients affected with low typhoid fever.—(Am. Journ. Med. Sci., Feb., 1840, p. 443.)

[‖] Am. Journ. Med. Sci., Aug., 1834, pp. 465 and 567.

[¶] Ibid., April, 1839, pp. 97 and 110. We were at one time inclined to the opinion of the specific nature of typhus, and we will speak of the disease again under the head of exanthematous typhus, but we believe most cases may be referred to this species, and hence it properly comes under this division of our subject.

The last form of disease which we will mention as belonging to this species is pneumonia typhoides. This disease in the United States has been known under various names, as "*malignant pleurisy,*" "*petechial or spotted fever,*" "*bilious epidemic fever,*" "*bilious pneumonia,*" &c., and I have no doubt that at least two distinct diseases have been comprehended under them. One is the true pneumonia, with typhus or pneumonia typhoides, which prevailed at Long Island in the winter of 1749, and was described by Dr. Bard in the first volume of the *Am. Med. and Philos. Register*, and again appeared at Medfield, in Massachusetts, in the year 1806, after which "it continued to show itself for several years in different parts of New England, and extended itself into some parts of New York, Pennsylvania, and Canada." The other I suspect to be a form of "marsh fever." In this form it has been known as "*cold plague,*" and has for the most part shown itself "among labourers employed on canals and similar works in miasmatic districts of the United States."† This latter species we suppose to be the same fever as that of Rome and Modena, already alluded to in our former paper, and the "*congestive fever*" of the West."

The former or true typhoid pneumonia we believe to belong to our present species. The accounts which I have seen of the morbid anatomy of this affection do not enable me to speak with confidence upon this point. Dr. Hosack‡ speaks of "the overloaded state of the vessels of the lungs, the large effusion of serum and sometimes *purulent matter.*" Dr. Dickson§ mentions hepatization of the lungs and "effusions of serum, of coagulable lymph and even of *purulent looking fluid*" into the ventricles of the *brain* and "within the cerebral substance."

Dr. Stokes‖ has described this disease as being frequent in Dublin, and he "classes under *the same head* the varieties of acute pneumonia which occur during the *course of typhus and typhoid fever*, as well as in *phlebitis, erysipelas, or diffused cellular inflammation.*" Such is also the

* Vide his Recherches sur la Fièvre typhoide, tome deuxième, p. 120.

† Practice of Med., by M. Hall, p. 281.

‡ Essays on Various Subjects of Medical Science, vol. ii. p. 894.

§ Essays on Pathology and Therapeutics, vol. i. p. 441.

‖ Treatise on Diagnosis and Treatment of Disease of Chest, as quoted by Am. Journ. Med. Sci. for Feb., 1838, p. 431.

view taken of this disease by Dr. George Sutton, of Aurora, Ia., who ranks it with the erysipelatous fever which has so extensively prevailed in the United States within a few years past under the common name of "*black tongue.*" For my own part I feel at present convinced that this last-mentioned affection, so far as I can form an opinion from the statements of others concerning a disease which I have never seen, is nothing more nor less than typhoid pneumonia in another form, and I am happy to give in corroboration of this opinion, the following extract from Dr. Sutton's* paper published in the "*Western Lancet.*" "This disease (epidemic erysipelas) has either assumed several characters or we have had several epidemics traversing the country together. One was an erysipelas connected with cynanche tonsillaris or swelling of some of the lymphatic glands. Another was what we considered a *typhoid pneumonia*, sometimes connected with swelling of the axillary glands. These two diseases have been so *intimately connected* in my practice, and wherever I can hear of the epidemic prevailing, that it has been a question with me whether *the last* was not a *pulmonic erysipelas.*† *The premonitory symptoms in each disease were alike;* the *character of the fever* in *each was the same;* it *was often the case that one form of the disease changed into that of the other;* and *we frequently had in different members of the same family, the two forms of the disease at the same time.*" It appears to me that we can want no better proof of the isopathic connection of these affections.

Having now passed over some of the most important diseases belonging to this type or species, we will take up the consideration of those which come under our second species of this division, and, on account of the space we have already occupied, we can do little else than enumerate the types or forms under which the species may manifest itself. The pathognomonic characters are as follows: fever, a hectic, constitutional disturbance, at first slight, or even imperceptible; purulent infection of the blood, terminating in immense collections of pus in some part of the body; pus, innocuous and often laudable, disease chronic, abscesses not disposed to heal readily after the matter is evacuated. Like the former species, one of the chief characteristics of this is the purulent infection of the system, or the disposition to the formation of pus. It differs, however, in its origin and progress, as well as in the fact that it seems not to have a tendency to spread by contagion.

Among the forms which we would enumerate, are those immense apostemes which are found, at times, in different parts of the body; such, for instance, as the *lumbar abscess*, *abscess of the liver*, *empyema or lodgment of matter in the chest*, and the disease called *vomica*, by Dr. Good, which, by the way, is nothing more than a symptom of the bursting of some internal aposteme. Of the same nature with the above, we are inclined to believe, are the scrofulous diseases of the *hip-joint*, known as "*hip-disease*," or "*morbus coxarius*," and of the knee-joint commonly called "*white swelling*," which we cannot make room to describe.

The last form under this species which we will notice, is the apostematous consumption, or "phthisis apostematosa" of Dr. Good. We will speak more particularly of phthisis under the head of "tubercular or strumous types." All that we can say here is that we have no doubt that under the name of phthisis have been comprehended at least three distinct species of disease,—one of which belongs to our present species, and is, in all respects, a purulent and not a tubercular affection. The secretion of tubercle and the secretion of pus are separate acts of the system, each of which must exist separately. Tubercular consumption may terminate without the formation of pus, as I think I once witnessed, and apostematous consumption is not necessarily connected with the previous existence, although I will admit that it may come on after the deposition of tubercles in the lungs. De Haen, as we have before seen, was unable to discover in persons who died of purulent consumption any "*mark of ulceration, or even the spot in which the pus had been formed*,—and in cases of the kind, so completely was the blood transformed into pus, that Dr. Hake observes, that "in the last stages of phthisis, the blood was found by Dr. Carswell and myself, to contain *no other globules than those of pus*." I cannot help, believing, however, that all these diseases are internally connected with a strumous or tuberculous disposition in the system, and they lead very naturally to the next general division of our subject.

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* Am. Journ. Med. Sci. for Jan., 1844, p. 248.

† Sarcone, Ludwig, and Planchon also regarded this disease as a pulmonic erysipelas, and Dr. Good thought them probably right in their conjecture.—Study of Med., vol. ii. p. 439.

Liberty County, Ga., *March* 31*st*, 1846.

Art. VIII.—*Some Statistics of Small-pox and Vaccination.* By J. F. W. Lane, M. D., Boston.

Within a comparatively recent period the importance of vaccination has been so carelessly and heedlessly discussed by medical men, that even the public are beginning to call in question its efficacy, and to demand at the hands of its practitioners a fair and candid statement of its actual value. It is urged that the cases of small-pox, after vaccination, have increased in frequency. If this be so, why is it? Has the vaccine virus been modified by its frequent transmission through the human system? Is its protective power of limited duration? What degree of blame, if any, can be attached to the careless application of matter by those unacquainted with the true character of the vesicle? These, and a host of other questions arise, for which answers must be sought by patient industry and searching investigation. Theory, mere speculative theory must be rejected from our examination; and data, statistical tables alone, be taken for the foundation of the superstructure,—a humble tombstone in memory of Jenner! Perhaps some law may be dimly discerned, but to discover the *laws of vaccination* were too much to expect as yet, for not half a century has elapsed since the practice was introduced to public notice by the celebrated inquiry of Jenner, (about the last of June, 1798,) and the question of revaccination is still in bitter contest, a question which time and epidemics can alone correctly answer.

These and other similar causes, not less than the degree of respect due to the memory of Jenner, imperatively call for a thorough and candid examination of the subject. Data must be collected from whatever source they can be gathered, and carefully arranged so that some general principles may be deduced therefrom. In the course of the following investigation great impediment has been experienced from the want of such statistical tables in this country as can be relied upon. The imperfections of the bills of mortality throughout the entire country are such as to throw doubts upon any deductions in regard to a particular point drawn from them only. Those of Boston, New York, Philadelphia, and Baltimore for a considerable series of years have been looked over, but little use has been made of them on this account.

It were foreign to our purpose to examine very minutely into the history of the various epidemics of variola since the flood, or, with some writers, to attempt to establish that the subject treated of is mentioned in the Old Testament. Thus Willan, upon the authority of Philo, finds the description by Moses of the plague of boils and blains perfectly adapted to the small-pox, some fifteen hundred years before the Christian era. So, also, the Chinese, claiming upon the score of antiquity every modern invention, must be allowed to have had, by their own testimony, the small-pox for at least 3000 years. We shall simply consider its fatality under known circumstances and in particular places.

Upon the authority of Dr. Baron, according to the researches of Black, Lüssmileh and Frank, eight or nine per cent. of the human race were carried off by small-pox. Duvillard estimates that only four out of the hundred reach the age of thirty without having it; that one in seven or eight of those attacked dies, and of those attacked in infancy only two-thirds escape. Dr. Cross, in his work upon the variolous epidemic of Norwich, 1819, furnishes the following table of the ages of 530 persons who were cut off by the disease of that year:

Under 2 years of age - - - - -	260
Aged from 2 to 4 years, - - - -	132
" 4 " 6 " - - - -	85
" 6 " 8 " - - - -	26
" 8 " 10 " - - -	17
" 10 " 15 " - - - -	5
" 15 " 20 " - - - -	2
" 20 " 30 " - - - -	2
" 30 " 40 " - - - -	1
Total ——	530

What proportion of these were *unvaccinated* he does not inform us, but from the general tenor of his work and subsequent remarks, we are led to infer that, with the exception of perhaps five, they were all in this condition.

In the *Annuaire des Longitudes* is given a table, formed by M. Mathieu, of the deaths from small-pox in the city of Paris, during the year 1830, arranged according to the ages.

Ages.	Males.	Females.	Total.
From birth to 6 months	4	5	9
" 6 months to 1 year	25	20	45
" 1 to 2 years	21	27	48
" 2 to 3 "	25	43	68
" 3 to 4 "	38	34	72
" 4 to 5 "	38	22	60
" 5 to 6 "	14	17	31
" 6 to 7 "	18	15	33
" 7 to 8 "	6	8	14
" 8 to 9 "	3	6	9
" 9 to 10 "	2	2	4
" 10 to 11 "	4	5	9
" 11 to 12 "	2	3	5
" 12 to 13 "	2	3	5
" 13 to 14 "	1	1	2
" 15 to 20 "	24	15	39
" 20 to 25 "	22	8	30
" 25 to 30 "	13	12	25
" 30 to 35 "	5	2	7
" 35 to 40 "	0	1	1
" 40 to 45 "	0	1	1
" 45 to 50 "	0	1	1
" 50 to 55 "	0	1	1
" 55 to 60 "	0	1	1
" 60 to 62 "	0	1	1
Total,	269	255	524

From these tables, recorded by M. J. B. Bousquet in his work upon variolous or varioliform eruptions, prepared by direction of the French government, in 1833, the inference may be drawn that small-pox is very rare from birth to 6 months of age; on the contrary it is very common from that period to 7 years, and again, from 15 to 30 years, the interval being passed in greater security, which will hereafter be seen to be the probable result of vaccination.

In the epidemic of Marseilles no infant under 3 months of age was attacked.

In his volume upon the Wurtemberg epidemic, Keim gives the ages of 37 persons attacked with natural small-pox to have been:

Under 3 years of age,	20
From 15 to 22	7
" 30 to 40	4
Unknown,	6
	— 37

From the London bills of mortality calculations have been made that at the commencement of the eighteenth century about one-fourteenth of the population died of the small-pox.

In Boston, Mass., the small-pox prevailed epidemically in 1649, 1666, 1678, 1690, and 1702, at the last period 302 died, being not far from 44 per 1000 of the inhabitants. In 1721 it prevailed again, and with great violence, for 5759 persons (more than half the inhabitants), had it in the natural way, of whom 844, or 1 in 7, died. In this same year the practice of inoculation was introduced, and 247 underwent the operation, of whom 6, or 1 in 42, died. The remaining tables of that city I reserve till upon the practice of inoculation, for in them is displayed the great contrast, even at that period, of the comparative fatality of the natural and the inoculated small-pox."

The following table of the deaths by variola, at Copenhagen, from 1749 to 1808, is collected by Dezeimeris from the records of Denmark:

From 1749 to 1758	2991	persons.
" 1759 to 1768	2068	"
" 1769 to 1778	2224	"
" 1779 to 1788	2028	"
" 1789 to 1798	2920	"
" 1799 to 1808	724	"

This sudden decrease can only be ascribed to the introduction of vaccination, under which head I shall examine more in detail the last decennial period, in the first two years of which (1799 and 1800) vaccination had not been introduced.

In the second Annual Report of the Registrar-General of Births, Deaths, and Marriages in England, published in 1840, it is shown that the deaths from small-pox in 324 divisions of the kingdom, from July 1st, 1837 to Dec. 31st, 1839, amounted to upwards of 30,819 persons, being, on an average, about 12,000 per annum; now, taking the allowed mortality at 1 in 4, or 25 per cent. of those attacked, and it follows, that nearly 50,000 cases of small-pox occurred during that year. Moreover, the total number of deaths in England and Wales, with a population of 13,897,187, (according to the census of 1831,) from July 1st, 1838 to June 30th, 1839, inclusive, was 331,007, of which 13,023 were deaths by small-pox. The number of deaths in England and Wales for the year 1838 was 342,529, of which small-pox was the occasion in 8,639 males, 7629 females,—total 16,268, making a proportional per cent. of 5·125 in males, and of 4·710 in females.

From the following table of the ages of 8,714 persons who died of this disease in 1839, prepared, probably, without reference to vaccination, (for of this point I do not find any mention made,) the disease appears at least more fatal, if not more general, in its attacks upon infancy and childhood under the age of 10 years; nor does it appear, as some writers would have us imagine, that those under 6 months escape with impunity:

MONTHS. Ages.	Males and Females.	YEARS Ages.	Males and Females.	YEARS Ages.	Males and Females.	YEARS. Ages.	Males and Females.
0	202	1	1524	25	148	65	10
1	181	2	1197	30	93	70	10
2	162	3	869	35	75	75	4
3	456	4	628	40	43	80	10
6	646	5	1122	45	22	85	1
9	588	10	206	50	13	90	0
		15	226	55	10	95	1
Total,	2235	20	240	60	19	Uncert.	8
						Total,	8714

Our conclusions then are:

1st. That small-pox is more frequently a disease of early childhood.

2d. That it appears to have increased in frequency.

1. *Inoculation.*—The first systematic attempt to check the ravages of this fatal scourge was made in 1722, by the introduction of the practice of

noculation with the small-pox into Europe from Turkey. Previous to this period, however, a work had been published in England (1714) by Dr. Timoni, of Constantinople; and also in 1715 one by a surgeon who had been in Turkey, Mr. Kennedy, advocating this mode of practice. Somewhere during the year 1717, Lady Mary Wortley Montague, wife of the British ambassador, Mr. Wortley, and at that time residing with her husband in Constantinople, caused her son Edward to be inoculated for the small-pox by Mr. Maitland, the surgeon of the embassy. In her letters home about this period she praises in the highest terms the new practice; and after her return, in 1722, she caused her daughter to be inoculated by the same gentleman, which was the first step towards the general introduction of the practice. The second individual was the daughter of Dr. Keith, of London; some of the royal family were also inoculated at a very early period, but still the practice did not at once meet with general favour.

A greater fatality seems to have attended its early course than existed in those countries from which it was introduced, arising, it may be, from inattention to previous treatment, for this fatality appears to have diminished as the operation became more generally diffused. Thus during the first eight years after its introduction 845 were inoculated, of whom 17 died, rather above 2 per cent.; according to Dr. Cross, 897 individuals submitted to this operation during these first eight years, of whom 17 died, rather below 2 per cent.; if we adopt either of these estimates we shall find the ratio of mortality to be greatly diminished below that of the small-pox in its natural form. Dr. Jurin examined the London bills of mortality for the period of 52 years, and estimates, that of all those attacked with the natural small-pox, of whatsoever age, one in five or six dies; but of the inoculated only one in fifty dies.

In the city of Boston (consult Shattuck on the Vital Statistics of Boston), the small-pox appeared as an epidemic in 1721, 1730, 1752, 1764, 1776, 1778, 1792, with varying degrees of fatality. The subsequent table presents in beautiful contrast the effects of the natural and the inoculated small-pox:

Year.	Cases.	Deaths.	Ratio per 1000 of the population.		Natural.			Inoculated.		
			Sick.	Died.	Cases.	Deaths	Ratio per 1000	Cases.	Deaths.	Ratio per 1000
1721	6006	850	546	77	5759	844	148	247	6	24
1730	4000	500	266	33	3600	488	135	400	12	30
1752	7669	569	489	36	5545	539	97	2124	30	17
1764	5646	170	364	11	669	124	185	4977	46	9
1776	5292	57	411	10	304	29	95	4988	18	5
1778	2243	61	166	4	122	42	344	2121	29	9
1792	8346	198	460	10	232	33	142	8114	165	18

During this latter year (1792) the town is estimated to have contained about 18,000 inhabitants, of whom 10,655 were supposed to have had the disease, 262 removed out of town, and 221 only of those who were liable escaped.

It has been calculated, that in England during the last thirty years of the last century, when the small-pox inoculation was most in vogue, the mortality from being one-fourteenth of the entire population, had augmented to one-tenth. Sir Gilbert Blane estimated the annual loss of life in Great Britain and Ireland during this period at 36,000; and Dr. Lettsom estimates it to have been 34,260; even this he considers below the truth. In these estimates, laid before the Committee of the House of Commons, the latter gentleman asserts, that in the 42 years between 1667 and 1722, the average number of deaths by the small-pox was to the entire number of deaths from all diseases as 72 to 1000; but that in the 42 years from 1731 to 1772, when the practice of inoculation was in constant use, the proportion was 89 in 1000. The former gentleman also advanced the calculation of Dr. Heberden before the same committee, making the deaths by the small-pox during the first thirty years of the last century to have been 70 in 1000, but during the last thirty years 95 in 1000.

Condamine in France, and Rosenstein in Sweden, calculate the deaths under the same circumstances to have been one-tenth of the births.

Great respect must also be given to the opinion of Dr. Gregory, of the Small-pox Hospital in London, who, as late as Feb., 1845, has taken the ground that it is unwise to prevent variolous inoculation entirely. He argues, that since small-pox after vaccination proves fatal at the rate of 7 per cent., while inoculated small-pox is only fatal in one-fifth per cent., therefore, persons verging on puberty might, with increase of safety, be inoculated, even if they have been vaccinated in infancy.

This apparent increase is beyond doubt deceptive, for while the actual mortality of the mass was increased, the individual was better protected. By the practice of inoculation the seeds of the distemper were kept ever alive, which, like a spark upon the hearth, the breath might fan into a flame. While confined to the individual it was comparatively a safe agent, but when bursting from control it rushed through the community its march was terrific, and for that outbreak the germs always existed.

The practice of inoculation with the small-pox was then to the individual one of safety, but to the mass of society fraught with danger.

2. *Secondary Small-pox*, or the occurrence of the small-pox after the individual had once had the disease, whether by inoculation or in the natural way, (for to this I would here restrict the term,) is found to have been of much greater frequency than physicians in general allowed or acknowledged, till since the introduction of vaccination. Some data to bear upon this point, if introduced in this place, may serve in a measure to fix our ideas, previous to an examination into the subjects of vaccination and of revaccination.

It is a matter of experience that those who pass in safety through one epidemic may be attacked in the next. Probably this arises from no change in the nature of the variolous virus, to whose influence they are exposed, but from some modification in their own habits and constitution, by which they are rendered, so to speak, more susceptible of its influence at one time than at another. A French writer, in speaking of the epidemic at Provence, describes it as "an epidemic so terrible that old men of seventy-four years, whom the small-pox had, so to speak, till then forgotten, finally paid their tribute to it, and several among them became its victims." The Royal Society reckon that there were in Marseilles, during the epidemic of 1827, among the rest of the population, 2000 who had had the variola previously; of these about 20 were attacked with the prevailing disorder, and 4 of the number died.

Dr. Cross, in his work already referred to upon the variolous epidemic of Norwich, remarks, that in *several* instances he had met with severe small-pox in adults who had, at various times before, both in Norwich and

London, resisted the intimate and continued exposure to contagion, and who had, therefore, good reason to suppose themselves forever free from it. "But" (to use his own words), "the most singular instance of the kind that I have ever heard of was communicated to me lately by my father-in-law, Mr. Bayly, who received the anecdote from one of the Suttons, with whom he was well acquainted. A man who believed himself to have had the small-pox, lived for *twelve* years as a nurse in the establishment for the reception of inoculated patients, which the Suttons had near Norwich, continually waiting upon the patients who were undergoing the disease; and at the end of that time he caught the small-pox, of which he died." He also gives another case of the confluent kind, occurring in a patient aged 24 years, who had been inoculated in childhood, at which time he was covered with a copious eruption and was ill for three weeks.

Unfortunately, I have not been able to obtain access to such statistical documents as will establish the exact proportion of secondary attacks; but, beyond a doubt, at the time of Dr. Jenner's publication of the "Inquiry," it had escaped the attention of medical men, "that small-pox occurred a second time as frequently as it has been proved to do, both by recent experience and past history."

Either the recurrence of small-pox under the following circumstances: previous inoculation, or after the natural disease, was by no means rare; or people were deceived as to the disease itself.

3. *Vaccination.*—Let us now consider that mild operation, intended to protect from the ravages of this fell destroyer, for which the name of Jenner has passed into every tongue and language throughout Christendom. To trace the gradual progress of his mind in the steps taken preparatory to the introduction among mankind of this useful and protective measure, would indeed be interesting, but would lead us too far from our object. From Baron's Life of Jenner it would appear, that the subject had occupied his attention from a period quite early in the pursuit of his medical studies, it being one of those sayings among the country people, that cow-pox was security against small-pox.

Encouraged by his master, John Hunter, who never permitted suggestions to lie dormant in the mind of any pupil, he seems to have fixed an ardent gaze upon this point of vaccination, like a bright star just appearing to the vision of the astronomer in the clear blue firmament, whose track it is to be his duty to discover, and point out. Perplexities and obscurities stood in the way of the calculations, which the bold hand of genius could not overcome, but only the patient onward march of industry. It was not to be the work of days and hours, but of years, spent in untiring effort. From 1775, when, by his own account, he first sat himself down in earnest to the task, until the 14th of May 1796, when the first successful experiment of inoculation with cow-pox virus was performed, by taking matter from the hand of Sarah Nelmes, infected by milking her master's cows, and inserting it into the arms of James Phipps, was but one continued train of experiment, careful investigation, and diligent research; for his was not the mind to allow error to creep in through inadvertence—he worshiped the truth. Every one knows the height to which the mind can be wound, when some great personal interest is at stake; but from this middle of May, to the first of the ensuing July, what must have been the state of Jenner's mind! the test by inoculation with variolous matter had yet to be performed. The altar had been erected, and a victim found; would the offering be received? It was,—and when, on the 1st of July, 1796, this boy was tested with variolous inoculation, no disease followed, and the chain of evidence was complete.

In 1798, all things having been arranged, Jenner came forth to the world with his Inquiry into the Cause and Effects of the Variolæ Vaccinæ. God bless thee, Edward Jenner, as the nations of this earth have already done thy name, for the words then spoken!

This is not the place wherein to trace the steps by which he became acquainted with the rise and progress of the vaccine disease; it has already been done by abler pens and clearer minds.

From the time of its first introduction, the practice found favour, and was very soon in general use throughout the civilized world:—but whence comes it that, while in the earlier years, the voice of vaccinators was universal and unanimous in favour of its absolute protection, they now hesitate to speak so decidedly of its efficacy? that they now talk of depreciation in the virtues of the vaccine virus, a temporary protection, the degree of constitutional disturbance, number of vesicles, and the like? what is the truth of the matter? perhaps a fair examination of such data as are within our reach may afford an answer. And having already examined into the fatality of small-pox, both before and during inoculation, let us now inquire,—what has been the fatality of small-pox since the introduction of vaccination?

No one, I believe, is willing to allow that the epidemics now occurring, are as fatal as they were; upon this one point all are agreed, that from some cause there do not so many of those attacked by small-pox, die of the disease, as in former years. This cause is vaccination, for where it does not afford absolute protection to the individual, it, in a degree, modifies the disease from variola to varioloid, or, at any rate, mitigates the violence of variola vera.

A table was constructed by Sir Gilbert Blane to illustrate the comparative fatality of small-pox at four different epochs; the 1st, being the 15 years previous to variolous inoculation; the 2d, 15 years after the introduction of inoculation; the 3d, 15 years prior to vaccination, and when, of course, the knowledge of inoculation was most widely disseminated; the 4th, embraces a period of 15 years since vaccination came into general use:—

1st.	From 1706 to 1720	Deaths 79	in 1000
2d.	" 1745 to 1759	" 89	"
3d.	" 1785 to 1798	" 94	"
4th.	" 1803 to 1818	" 53	"

We have already spoken of the deaths by variola in *Copenhagen* from 1749 to 1808, (the table of which is given on page 122), and we must here add, that

From 1800 to 1804, *not one* case of variola occurred in a vaccinated person.

In 1804, *two* cases of the modified variola, or varioloid, were observed.

In 1805, *five* died of the varioloid.

In 1806, *three* died of the varioloid.

In 1808, there were *forty-six* deaths by variola, thirteen of which were by the varioloid.

Contrasting, then, this entire decennial period (1799 to 1808), with the preceding (1789 to 1798), and the deaths were diminished during the latter by upwards of three-fourths. According to one writer, the annual mortality during the latter epoch was reduced to 60, but calculations drawn rom the statistics of a country are more worthy of confidence than gene-al statements.

Dr. Bremer, of *Berlin*, gives a table, by which it is declared that there died in that city of small-pox,

During inoculation, from 1790 to 1799,	4117
" vaccination, " 1808 to 1817,	1367,

being a diminution by 2750 of the number of the deaths: or there

Annually died during inoculation	412
" " " vaccination	137,

the ratio being diminished by more than one-half. In 1812, the National Vaccine Establishment was founded, and the annual mortality from small-pox diminished to 50; from 1817 to 1821 it was 12; in 1821 and 1822 only *one* death each; in 1823, when small-pox was epidemic in Prussia, there were in Berlin 200 cases, of which 5 died; a result, which is contrasted by Hufeland with the epidemic of 1801, when there were 16,000 cases, of which 1646 died.

In *Sweden* the number of deaths from small-pox were

From 1782 to 1791,	47,587
" 1792 to 1801,	44,184
" 1802 to 1811,	14,904
" 1812 to 1821,	3,309

During the 25 years preceding the discovery of vaccination, the annual number of patients received into the Small-pox Hospital of *London* was 286; from 1800 to 1824, the average was reduced to 143.

Vaccination was introduced into *Vienna* by Dr. De Carro, in May, 1799. The effect of it was so great, that in the year 1804 only *two* died of small-pox in the whole city, and these two cases were from abroad. By Report of the National Vaccine Establishment, 1812, on the authority of Drs. De Carro and Sacco, Vienna had been free from small-pox for five years, and Milan for eight.

In *Ceylon*, between the years 1802 and 1810, under the direction of Dr. Christie, 128,732 persons were vaccinated, and consequently, the small-pox was unknown from Feb. 1808 till Oct. 1809, when a few cases occurred, which were arrested by timely vaccination.

In the report presented to the Governors of the *London* Small-pox Hospital, Dec. 1818, by Dr. Ashburner, a calculation is made of the number of deaths among the patients admitted 20 years before and 20 years after the introduction of vaccination, showing the deaths

From 1778 to 1798 to have been	1867
" 1799 to 1818 " "	814
A diminution of	1053

In the history of small-pox, by James Moore, Member of the Royal College of Surgeons, published in 1815, may be found the following extract from a letter by Dr. A. Crighton, Knight of the Order of St. Walmoden, and Physician to the Emperor and Empress Dowager of *Russia*, dated at St. Petersburgh, Sept. 12th, 1812. "The whole number of the children inoculated with the vaccine, (from the year 1804 to 1812,) concerning whom the government has received certain information, amounts to 1,235,597. Now, supposing, according to a well-founded calculation, that before the introduction of vaccine inoculation, every seventh child died annually of the small-pox, vaccination has saved the lives, in this empire, of 176,514 children.

Tables have already been given to display the ravages of this disease in the city of Boston, at various seasons during the eighteenth century;—a great contrast will be found in the peculiar epidemic of 1839 and 1840.

During the month of July 1800, Dr. Waterhouse, then professor at Cambridge, vaccinated successfully four of his own children and three domestics, (these being the first vaccinated upon this continent,) not long after which they were inoculated for the small-pox without success, and again after the lapse of seven years with like issue. From this introduction, and the experiment performed, on one of the islands in the harbor of that city in 1802, of inoculating with variolous matter, a number of boys, who had passed through the cow-pox, and thus establishing their perfect immunity, the practice continued to increase, until, by regulation of the Board of Health, it was provided, that every person attacked with natural small-pox, (for the inoculation was forbidden under heavy penalty,) should be removed to the quarantine ground, situated upon an island at some distance from the city. About 1838, this, with other quarantine regulations, was abolished, and in the summer of 1839, the year following, an epidemic of small-pox broke out.

From 1811, when a new system of registration for the city bills of mortality went into effect, to 1838 inclusive, there were but 39 deaths by small-pox in all. In 1839, there were 60 deaths by this disease, and in 1840, they amounted to 116. In fact, such was the virulence of the epidemic, that secondary small-pox, *i. e.*, after the individual had once passed through the disease, whether by the natural way or by inoculation, was of common occurrence,—two cases of this kind, where the previous attack had been natural, fell under my own observation. In May, 1840, a census was taken, by which the number of stationary inhabitants was found to be 84,311 white, and 2,321 coloured; thus plainly showing that this year, when, in truth, many cases of varioloid, in all its different forms, occurred, and when small-pox was evidently and indisputably epidemic, there was but *one* death to 746 inhabitants; in 1792, when it was also epidemic, the population of the city being 18,038, the deaths were *one* in 91 of the inhabitants, the entire number from this disease during the latter year being 198.

An experiment similar to that by Dr. Waterhouse, was performed upon a larger scale by the old *French* committee, in the year xi., (1803): 202 vaccinated persons were inoculated with variolous matter, producing in 84 no effect; in 18 local irritation, but no fever, malaise, or eruption; in one there were two pustules of variolous appearance, such as not unfrequently appear upon nurses and physicians in charge of patients with variola. In 1811, the Minister of the French Interior, in his address introducing the report of the National Committee of Vaccination, asserts, that 1,400,000 children were annually born in the French empire; that in former years, 1,000,000 annually went through the small-pox, of whom 150,000 died. In 1811, there were 70,000 cases of small-pox, and 8,500 deaths.

Data similar to those already given, might be collected from the records of nearly every known nation, proving that the fatality of small-pox, in the entire mass of the population, since the introduction of vaccination, has become of no account. Still, it is established that some cases have arisen, and, therefore, it becomes necessary to extend our investigations.

4. *The recurrence of small-pox after vaccination.*—When we consider the ease and simplicity of the operation, it is not to be wondered at, that many parents and others should have taken upon themselves to propagate the disease, without a requisite degree of acquaintance with the peculiar characters of the genuine vesicle. Besides, as the spurious, equally with the genuine cow-pox vesicle, leaves its scar behind, it will be very difficult, if not impossible, for the physician to determine in after years with regard to the genuineness of the disease. After such imperfect protection an attack of small-pox might be expected; but it is alleged, that the cases of secondary small-pox, or small-pox subsequent to vaccination, are increasing in frequency of late; and having now become so numerous as to prove the fallacy of the argument from the spurious vesicle, an explanation must be sought from another source. The great objection to all data here, and one which I do not know how to obviate, is, that out of the vast number, not only bearing upon this point, but also upon revaccination, the actual proportion, in which the previous operation proved successful, cannot be ascertained. The best and most certain method would be, for a body of physicians to record the cases of secondary small-pox in individuals, whom they had themselves vaccinated, and whose vaccinations they had marked in their note-books as perfect; in the absence of data so convincing, we must take what we can find.

Let us return once more to the statistics of *Copenhagen*, as furnished by Dezeimeris, in the *Encyclographie des Sciences Médicales*, for Oct. 1838. From the year 1808, (consult page 12,) the number of the vaccinated attacked with variola or varioloid, continued to increase until 1819, when they attracted universal attention. In 1823, an epidemic broke out, and the erection of a special hospital became a measure of necessity. Of this, Dr. Nicholas Christian Moche was appointed physician, from whose reports are drawn these tables.

From the 1st of January, 1824, to Feb. 28th, 1825, there were received 412 cases, of which 40 died; of these

257 had been vaccinated,
58 had had the variola,
97 had neither been vaccinated nor variolated.

Of these, 16 were cases of true variola, of which 3 died, but what proportion occurred among the vaccinated, if any, is doubtful.

From the records of the same hospital it appears, that another epidemic broke out in Sept. 1825, and continued to the middle of 1827, in which time were admitted 623 cases of variola or varioloid; of these, 438 had been vaccinated, of whom 26 had the genuine variola, and 2 among them died.

A third epidemic continued from March, 1828, to July, 1830, during which period 562 cases were admitted, the care of the hospital having passed into the hands of Dr. Wendt. There were attacked with true variola 111, viz.:—29 vaccinated, of whom 4 died, or 1 in 7; 1 doubtful; 84 not vaccinated, of whom 24 died, or 1 in 3½.

From Aug., 1832, to the end of 1834, there raged a most violent epidemic; cases admitted, 1045; deaths, 45; viz.:

147 unvaccinated,	of whom 34 died,	or 1 in 4,
898 vaccinated,	" 10 "	or 1 in 90,

All the deaths occurred among the cases of *true variola*, being 179, viz.:

119 unvaccinated, of whom 34 died, or 1 in 3½,
60 vaccinated, " 10 died, or 1 in 6.

From the middle of May, 1835, to the end of that year, there were admitted to the hospital 1197 cases, of which 106 died. Of these there were

Vaccinated, 1043, of whom 47 died, or 1 in 22,
Unvaccinated, 123, of whom 51 died, or 1 in 2½,
Doubtful, 31, of whom 8 died,

The reports from the *London* Small-pox Hospital, under the charge of Dr. Gregory, furnish evidence every way as conclusive, with regard to the recurrence of the disease after vaccination, and moreover, that this tendency is on the increase, e. g.

For the 25 years preceding the discovery of vaccination the annual average was	286
From 1800 to 1824 the annual average was	143
In 1825 " "	419
From 1826 to 1837 the annual average was	270
From 1837 to 1838 " "	740

In 1823, Dr. Gregory published a table from which are drawn the following proportions of persons attacked after vaccination.

In 1809	one in 36	In 1819	one in 6
In 1810	" 30	In 1820	" 6
In 1811	" 15	In 1821	" 4
In 1814	" 20	In 1822	" 3½
In 1815	" 17	In 1838	" 2½
In 1818	" 6		

The following table, exhibiting the comparative fatality of small-pox among the unprotected and vaccinated at the small-pox hospital, London, during the epidemic of 1830, also presents the fatality of variola after vaccination in contrast with that before.

	Unprotected.		Vaccinated.	
	Admitted.	Died.	Admitted.	Died.
Confluent	295	149	56	21
Semi-confluent	78	8	42	4
Distinct	19	0	20	0
Total normal	392	157	118	25
Confluent modified	2	0	38	4
Semi-confluent modified	1	0	28	1
Varicelloid	1	0	114	1
Total abnormal	4	0	180	6
Grand total	396	157	298	31

In 1836, there were admitted into this same hospital 329 patients, o whom 128 were after vaccination.

Some remarks were made by Dr. Gregory at a meeting of the Roya Medical and Chirurgical Society, in Dec. 1838, from which has been prepared the following abstract. The examination of from 600 to 700 case shows a modification of small-pox in 60 per cent. of the vaccinated; of th 40 per cent., in whom unmodified, the results and mortality are the sam as in the unvaccinated. In 100 cases of small-pox after vaccination ther would be 9 deaths, in 100 cases among the unvaccinated, the deaths woul average 25.

The following table, embracing 90 cases, is taken from the *Lancet* for January 19th, 1839, and occurred during the year before.

	Cases.			Deaths.	
Ages.	Before vac.	After vac.	Small and vac.	Before vac.	After vac.
1 to 15	18	28	5	5	
16 to 25	6	16	1	0	1
26 to 35	0	9	0	0	0
36 to 45	0	5	0	0	0
50 to 70	0	2	0	1	0
Total	24	60	6	6	1

In almost direct opposition to the evidence afforded by such documents, M. Bousquet asserts, that "if secondary variola, I mean the true variola, attack one in a thousand of the vaccinated, it is all. Wherefore, it follows, that of ten thousand vaccinated, the small-pox would attack ten, and from this number there will be one death, since it is proved, at least, to decimate those whom it attacks,"—evidently a mere expression of opinion. In this connection it will not be amiss to introduce, from the same author, an authentic account of the epidemic of Marseilles, already alluded to, exhibiting, as it does, the degree of protection afforded by vaccination, the frequency of the recurrence of small-pox after vaccination, and the mortality of variola among the unprotected.

In the same Journal, for Dec. 21st, 1844, we find that Mr. Marson, of the Small-pox Hospital, represented to the Westminster Medical Society, that at no period since its foundation, with the exception of the years 1781 and 1838, had there been so many patients in the hospital. The ages of those admitted after vaccination, in five cases out of six, were between 18 and 23. Where the cicatrix was perfect, the disease was three times less fatal than where it was imperfect.

The epidemic of Marseilles, in 1828, attacked no infant under three months, and no individual above 30 years; now it was estimated by the Royal Society that there were in the city 40,000 inhabitants of this condition. These it divides into three great classes, viz.:—

30,000 vaccinated; 8,000 not vaccinated; 2,000 variolated.

Of the vaccinated 30,000, there were attacked 2,000, or one-fifteenth.
" unvaccinated 8,000, " " 4,000, or one-half.
" variolated 2,000, " " 20, or one-hundredth.
Of the 2,000 cases among the vaccinated 20 died, or one-hundredth.
" 4,000 " " unvaccinated 1,000 " or one-fourth.
" 20 " " variolated 4 " or one-fifth.

Dr. Cross gives five cases of small-pox after vaccination, of which he was informed by his correspondents, and adds: "If we consider, that above two-thirds (87) of all the medical men within a district comprising not less than 350,000 inhabitants, communicated to me their opinions; and that, after the end of the year 1819, I continued my researches in every quarter where I heard of reported failures, up to the time when I arranged this sheet, (May, 1820,) it is scarcely assuming too much to state, that it is probable this contains nearly every fatal case of small-pox which occurred, during the epidemic in the country around Norwich, in persons believed to have been vaccinated. The number is reduced to *one*, who was attended during the fatal disease, by the surgeon who vaccinated him, *another* vaccinated by an unknown medical man, and *three* by old women; and compared with the number vaccinated, and the great proportion of those who must, within the last year and a half, have been exposed to the small-pox, we may regard it as a triumphant proof of the fatal effects of the latter disease being generally prevented by the cow-pox." Upon the same authority it is asserted, that the 200 cases of small-pox after vaccination, recorded by Pougen, were without danger; Hugo's 50 cases at Crediton terminated favourably; and, in short, that nearly all the cases of *modified* small-pox related by some writers, English and German, were without danger.

In 1812, a document was drawn up by MM. Berthollet, Perce, and Halle, for the Provincial Vaccine Institutions throughout France, by order of the government; in this it is affirmed, that of 2,671,662 persons *properly* vaccinated in France, only 7 cases of subsequent small-pox appear, or 1 in 381,661; and well-authenticated instances of *secondary* small-pox are far more numerous, in proportion.

In the epidemic of Tuttlingen, 1833, Dr. Rösch had charge of 59 cases of small-pox, 52 of which were in the vaccinated.

In 1831, Gambriani gives 748 cases of various degrees of variola, 643 of which occurred in the vaccinated.

Thus, perhaps, sufficient statistical evidence has been brought forward to establish the fact of an increasing recurrence of small-pox after vaccination—an increase greater in proportion than the increase of population, or the increasing numbers submitted to the operation, whereby, of course, an occurrence at first quite rare would be rendered very common, can be allowed to account for.

The disease occurs either in its natural state, as the true variola, or modified, as the varioloid; for often the variola does not show itself after vaccination with its own peculiar attributes, but is mollified and modified, whence the name *varioloid*, evincing, at the same time, the form and the nature of the disease.

5. *Vaccination as affected by the lapse of time.*—Some have even gone so far as to raise the question with regard to the degeneracy of the vaccine virus in use at the present day, but the opinion is rather one of speculation than of actual value. In fact, it is incorrect; the only experiments I am aware of, being in Germany, and the effect of inoculation then, within a short time of vaccination, was, as in the days of Jenner, confined to local irritation. One of two things must be allowed: either there has been a degeneration of the virus, or the protection afforded by vaccination is temporary. To my own mind, the data about to be brought forward, are as well accounted for upon the latter hypothesis as upon the former; and, in the alternative of two evils, not only is it best to choose the least, but the one which rests upon the surest foundation. Moreover, if the virus have actually degenerated, revaccination would prove more successful in those most recently vaccinated, but the contrary has been found true, the success of revaccination depending upon the lapse of time since the first performance of the operation.

The first data which I shall bring forward under this head, are from the work of Thomas Brown, *On the Anti-variolous power of Vaccination*, being an abstract of 48 cases, in which variola appeared in some form after vaccination. It is given merely because the volume from which it was obtained is now before me, and I did not feel authorized wholly to exclude the data of any one; but from the looseness with which the cases are recorded, the want of distinction between the true and the modified variola, and more than all, the avowed prejudice of the author, not much confidence can be placed in them. One fact they certainly establish, that the vaccinated are comparatively free from the fatality of small-pox; for, while the epidemic was raging with such virulence around, that many even among the vaccinated were attacked with it in a modified form, out of the 48 cases there was not a single death. Of these 48 there were

20 from 2 to 5 years of age,
24 " 5 to 10 " "
1 " 10 to 15 " "
3 not mentioned as to age.

The date from vaccination was

Under 6 months in	1
From 1 year to 18 months in	1
" 18 months to 2 years in	1
" 2 years to 30 months in	4
" 30 months to 3 years in	6
" 3 years to 5 years in	17
" 5 years to 10 years in	18

The cicatrices were

Distinct in	28
Large in	12
Small in	2

Not mentioned in *six;* the form of attack seems to have been the same in all; the universal result was recovery.

In 1823, Dr. Gregory furnished a table of the relative ages of 137 persons attacked by small-pox after vaccination, as follows:—

Below 10 years of age	5
From 10 to 20 "	76
" 20 to 27 "	56

Of the patients admitted to the hospital, under his charge, in the epidemic of 1836, in all 329, of whom 128 had been vaccinated, the ages were

From 1 to 5 years (inclusive)	0
" 6 to 10 " "	2
" 11 to 15 " "	11
" 16 to 20 " "	40
" 21 to 25 " "	49
" 26 to 30 " "	20
" 31 to 40 " "	5
Beyond 50 "	1

The language of this gentleman, as reported in one of the public journals, was: "It is no proof that the vaccination has been perfect, because the child has been exposed to small-pox and did not receive it. Puberty and other changes which take place in the system, between the ages of 15 and 25, put vaccination to the test. All the severe cases of small-pox after vaccination, which he had seen, had, without a single exception, occurred 15 years after the latter affection. He had seen no severe case which occurred at a period shorter than this. One or two very mild varioloid cases had occurred in children between 8 and 9 years of age; none, even of this form, earlier. The earliest death from small-pox after vaccination was at 15, and the mortality increased as the persons advanced in life, the greatest number occurring from 25 to 30." The assertion contained in this latter sentence does not exactly coincide with the rate of mortality, as presented by the tables of this very hospital, during the epidemic of 1838, from which it will be seen, that the greatest number of cases and proportional mortality were both in the unvaccinated and the vaccinated between the ages of 15 and 25, or more especially from 20 to 25. Of the vaccinated, who were admitted, 114 had the varicelloid; 66 had the disease, severe at first, but shortened and modified in its subsequent stages, while 118 (or 40 per cent.), underwent the disease in a regular, normal, or unmitigated form; and in them the rate of mortality was nearly the same as in those who had never been subjected to the operation. This is the table:—

Ages.	Unvaccinated.		Vaccinated.	
	Admitted.	Died.	Admitted.	Died.
Under 5 years of age,	42	20	0	0
From 5 to 9 inclusive,	37	11	5	0
" 10 to 14 "	30	8	25	0
" 15 to 19 "	104	32	90	6
" 20 to 24 "	115	50	106	16
" 25 to 30 "	45	23	55	8
" 31 to 35 "	12	7	13	1
Above 35 years of age,	11	6	4	0
Total,	396	157	298	31

At the meeting of the same society where the remarks above given were made by Dr. Gregory, it was asserted by Dr. Copland, that from data collected by himself he was convinced, that the protection of vaccination did not extend beyond a seventh or eighth year; the small-pox would then be modified, but unmodified generally from the fifteenth to the nineteenth year,—at first, the protection was perfect, then imperfect, this imperfection gradually increasing in degree with the lapse of time.

In the first *Copenhagen* epidemic recorded by Moche, from Jan. 22d, 1824, to Feb. 28th, 1825, of the 257 vaccinated who were attacked, the ages were:—

Under 7 years	24
From 7 to 11 "	42
" 12 to 23 "	191

In the epidemic of the same place from March, 1828, to July, 1830, when 562 cases were admitted to the special hospital, "one only among the vaccinated was but four years and a half old; the others were adults, and had almost all been vaccinated in the earlier years of the introduction of vaccination into Denmark."

From another table by the same author, it appears, that of 653 cases of *modified* small-pox, the ages were,—

Under 10 years	82
From 10 to 20 "	356
" 20 to 30 "	209
Above 30 "	6

and that not a single case of true variola appeared in a child under 14 years of age; not a single case of mortal variola in an individual under 23; and not a case of any form of variola in a revaccinated.

Of the 1197 admitted to the hospital from May 11th, 1835, to the end of that year, 1043 had been vaccinated, among whom were 47 deaths, not one of which was in an individual under 18 years of age, three were in the eighteenth or nineteenth year, and all were removed by more than fifteen years from the date of their vaccination.

It were well to take one more glance at the table of M. Mathieu, to be found upon page 000.

Heim has given the ages of 176 persons attacked with variola vera after vaccination, as follows:

Under 5 years	6
From 5 to 9 "	9
" 10 to 15 "	31
" 15 to 20 "	46
" 20 to 25 "	39
" 25 to 30 "	30
" 30 to 35 "	15
	176

From yet another table by Dr. Heim of the vaccinated who were attacked by modified small-pox during the Wurtemberg epidemic, the whole number of cases being 1025, the ages were

Under 10 years	94
From 10 to 20 "	1107
" 20 to 30 "	502
" 30 to 35 "	22

In an epidemic observed by Rösch, of Trossingen, out of 58 cases of small-pox after vaccination, there were

Under 10 years of age	7
From 10 to 20 years	29, of whom 2 died.
From 20 to 30 years	22, of whom 2 died.

Of these, the 7 under 10 years of age were mild, without a death; of those from 10 to 20 years of age, 13 were mild, 12 moderately severe, 2 dangerously affected, and 2 (one aged 11, and the other 19 years), died; of those from 20 to 30 years of age, 13 were moderate, and 9 severe, so that of the latter 2 died.

In *Sweden* there were, in 1834, 560 deaths from small-pox, of which 103 occurred in those vaccinated in infancy, all of them being upwards of 15 years of age. A result nearly similar was obtained by Hedlund, who found that of 69 persons attacked with true variola, 34 were adults, whose vaccination dated from 16 to 18 years previous; in the same epidemic he met with 91 cases of varioloid.

But when do these cases usually occur? Not in common times and seasons, but when the epidemic has reached its acme. At the commencement such cases are not found, nor yet at the end, in so great numbers, for the course of small-pox is to increase at an accelerated and then at a retarded rate, until it has reached its acme in numbers and virulence. At this time the cases of variola, or of the varioloid, appear in the vaccinated, and not till this time, when the disease is doing its worst in the most concentrated and virulent form of the contagion; and they decline with the disease, which "declines first at a slightly accelerated, then at a rapidly accelerated, and lastly at a retarded rate, until it attains the minimum intensity, and remains stationary."

Thus might we go on accumulating evidence from the history of every epidemic which has visited the civilized world within the past ten years, whereon to rest our conclusions, but enough data, it seems to me, have been advanced from which to make the following deductions:

1st. That the protecting power of vaccination is perceptibly diminished by lapse of time; the gradations being perfect security, the varioloid, variola.

2d. That at the period of puberty a change takes place in the constitution by which the immunity is greatly diminished, and that *prior* to this period we never find true variola to occur after vaccination.

Can any evidence as to the safety of the individual be drawn from the character of the cicatrix? I think not; because the cicatrix or scar is but the evidence of some injury to the structure of the part, and it certainly would be most absurd to expect this to fade away at just the right moment. Allowing that the shape, indentations, and other peculiarities of the vaccine-scar permit us to distinguish it from any other, still all this only shows that in time gone by there was a peculiar sore in this spot, which has left its marks behind. It does not show the degree of constitutional disturbance, if any, nor yet does it reveal to us whether any of those many injuries to which it was constantly exposed, happened to the vesicle in its course by which the effect was lost.

Not much time need here be spent in the collection of data, and we will begin our researches by including nearly all the cases already given of small-pox after vaccination, the scar upon the arm being regarded as evidence that it had been performed. Great weight must also be placed upon the success of revaccination in such cases, and which will be found recorded under that head: in this place I shall content myself with two instances only.

The first is from the Wurtemberg epidemic, in which, "of 1055 cases of small-pox, in which the marks were visible, 914 had good, and only 141 imperfect marks; 147 of these, notwithstanding that the vaccine marks were normal, were cases of genuine small-pox."

The second is the opinion of Dr. Gregory, whose experience certainly has been most extensive, who does not consider that the character of the cicatrix affords any evidence of the success of the operation, nor yet of the small-pox, which may afterwards occur. Moreover, that in the very worst cases which he had witnessed after vaccination, there were excellent cicatrices. "Two persons in whom the vaccination had been perfect, died," one aged 29 years.

The cicatrix, then, affords no evidence of the security of the individual, or the success of vaccination.

Age.—It is a matter of some moment to determine the age at which vaccination should be performed in order to secure its beneficial effects. That it may be performed at too early a period, there can be no doubt. From an examination of the tables of deaths from small-pox, given page 130 and page 131, and from the fact that during the Marseilles epidemic no infant below three months of age was attacked, I am inclined to fix upon the period from three to six months, about which time the variolous inoculation was performed. This early performance is indeed objected to by some German authors, but not, as it seems to me, upon sufficient grounds, for while they advise that no child should be vaccinated within the first twelve months, because the vesicles do not then appear so perfect, others are of opinion that the vesicles are full as brilliant, and the operation as effective at an earlier date.

Great stress has been laid by some of the recent European writers upon the number of vesicles and the degree of constitutional disturbance, as affecting the protective power; but it may be questioned whether the effect of the punctures is as likely to be merely local at a primary as upon a subsequent vaccination. This point is not then one of much importance; for an equal degree of protection is afforded by one or more vesicles, provided only that the evidence of constitutional disturbance be plainly marked.

When, therefore, the course of the vaccination has been regular from first to last,—the vesicles undisturbed,—the areola not too extensive,—attended by a certain amount of general febrile disturbance,—the individual labouring under no other disease to modify its influence,—then may we pronounce the vaccination to have been perfect.

The protection thus afforded the individual is perfect for the first few years, it then becomes imperfect, and the individual (if exposed) is liable to be attacked by some of the varioloids; finally at puberty such change takes place in the constitution that many individuals lose even this degree of protection, and become again liable to the true variola. Vaccination performed after this period may be considered in most cases to afford absolute protection.

6. *Revaccination.*—Within a very short time the practice of revaccination has been introduced, as affording protection under circumstances where the primary operation failed. The limited period which has elapsed since the practice came into notice, renders it almost impossible to judge with accuracy of its ultimate effects. This must be determined by the lapse of time, and the return of several epidemics.

If, as was the opinion of Jenner, and has recently been perfectly established by the experiments of Dr. Sunderland, of Bremen, Dr. Thiele, of the southern part of Russia, and Mr. Ceeley, of Amesbury, England, (all of whom have succeeded in producing the regular vaccine disease by affecting the cow with small-pox,) the variolæ vaccinæ are a mild or modified species of the small-pox, then must they follow in a mild or modified degree the same laws which regulate the small-pox. If then the latter does not afford perfect security from a subsequent attack of the disease, neither yet can the former be expected so to do, for if it be modified its protective power must be modified also.

As a measure of security revaccination is evidently required in all cases where the success of the primary operation is doubtful, and if our deductions be allowed, it must be performed about the period of puberty, not only with the view to expediency, but even to *protect* in case of the eruption of an epidemic.

The revaccinations in the Danish army for 1837–8 display, in a remarkable manner, the negative evidence of the cicatrix, and also the increased protecting power of revaccination.

Year.	Number Re-vacc.n.	Cicatrices of former Vac.		Result of Revaccination.		
		Distinct.	Indistinct.	Genuine Ves.	Not Gen. Ves.	No Result.
1837	3741			1601	1015	1125
1838	3721	3317	404	1464	1000	1257

Of the number who in 1838 resisted revaccination, 129 had had the natural small-pox, and 111 had been twice revaccinated. In the same year there were, in the whole army, 24 cases of small-pox, partly in children, (modified or unmodified is not stated.) Of the individuals who have been successfully revaccinated, not one has been attacked with small-pox.

But a table of far greater value is contained in the *British and Foreign Medical Review*, for July, 1836, being translated from *Rust's Magazin*, band. xlv., heft. i., 1835. It is entitled, "The Revaccination of the Prussian Army, for 1834."

1. The number of men vaccinated was	44,454
2. Of this number, had distinct marks of previous vaccination	33,634
" " indistinct marks	7,134
" " no marks	3,686
3. The present vaccination was regular in its course in	16,679
" " irregular " "	12,287
" " without any result	15,488

4. Of the 15,488 in whom the vaccination entirely failed, there were

revaccinated a second time	4,530
Of whom took the disease	866
No result	3,664

5. The number of true pustules in those who took the disease regularly

was:—From 1 to 5 in	6,763
" 6 to 10 in	5,028
" 11 to 20 in	4,088
" 21 to 30 in	800

6. Of those who had been previously vaccinated, or on the present occasion were revaccinated and took the disease properly, 79 were affected with some form of variolous or varioloid disease in the course of the year,

of whom had varicella	46
varioloid	31
true variola	2

7. In the whole army, the number affected with varicella, varioloid, or true variolà, in the year 1834, were, however, 619, including the 79 just given; consequently, in 540 of these patients the revaccination had been either irregular, had not succeeded, or had not been employed at all. Of these 619 soldiers 38 died of the true variola; of whom 2 had been vaccinated with effect, 6 without effect, and 30 (nearly all raw recruits) not vaccinated at all.

In contrast with this success is the performance of the operation, revaccination, among children, and first, that at the Foundling Hospital, London, in 1839:

1. The number of children revaccinated was	216
2. Of whom went through the disease regularly	11
" " " irregularly	122
Failures	83
3. Of the 11 who went through the disease regularly, the cicatrices were perfect in	8
" " imperfect in	2
none in	1

4. The youngest of the 11 was aged 5 years, the eldest 13.

Dr. Kirkbride, of Philadelphia, revaccinated 209 children, upon some part of whose limbs a perfectly formed, rounded, stellated or punctated cicatrix was found; the average age was 12 years, the extremes being 6 and 20; of these, 44, or rather more than 21 per cent., had the disease perfectly. There is one more document, by Wendt, presenting a result so nearly similar to the last, that I shall give it:

Age.	Successful Revac.	Unsuccessful Revac.
From 1 to 10 years	33	1
" 10 to 20 "	216	82
" 20 to 25 "	2175	998
" 25 to 30 "	191	76
" 30 to 40 "	123	43
" 40 to 50 "	18	8
	2756	1208

To determine with any degree of certainty the actual value of revaccination will require more time and epidemics than have yet elapsed since its introduction. Of this only are we certain, that it is required in all cases of doubt with regard to the previous operation; and by all the laws of expediency, if not upon yet stronger grounds, within a short period after puberty.

In the number of this Journal for April, 1842, will be found a valuable paper, giving the details of 686 cases of revaccination, by the lamented Dr. Forry, to whose accurate Boylston Dissertation, in the *New York Journal of Medicine* for Sept., 1844, we would also refer the reader.

Art. XIII.—*Case of Imperforate Hymen.* By Jno. Geo. Metcalf, M.D., of Mendon, Mass.

Cases of imperforate hymen occur so rarely that some even doubt the reality of their existence. For this reason, and to preserve a more lasting record of an anatomical curiosity than the note-book of a country physician, the following case is offered for publication.

On the 15*th of May* last, I was called to see Miss G., aged 15. Arriving at her father's house, I found the patient suffering severe pain over the region of the sacrum, extending through in the direction of the pubis; micturition frequent and scanty in quantity; pain of an intermittent character, occurring at short intervals, and has been quite severe for the last two days; the tongue has become somewhat coated, white, but moist; appetite impaired; abdomen neither tense nor tender upon pressure; bowels open; pulse natural.

Upon further inquiry found she had never menstruated. From her age and present symptoms, made up my mind that that function was about to make its appearance, and so made the following prescription. ℞.—Morph. sulph. gr. one-fourth, once in two hours, pro re nata. Stupes to vulva. Pediluvium at bed-time.

May 16*th*. Calling on my patient this morning I found her much relieved from the pain, but there was no appearance of the menses. Finding the bowels were somewhat constipated I made the following prescription:—℞.—Pil. aloet. for cathartic and emmenagogue. Continue recipe of yesterday.

17*th*. Found my patient about her work, the physic having operated well and the pain all gone. No menstruation had appeared. Without further inquiry the case was dismissed.

20*th*. Passing by her father's house this morning, I was again called to see Miss G., who was reported to be quite sick. Entering her room, I found her in great pain, so as, frequently, to make her cry out. On inquiry, I found the pain seated between the sacrum and pubis, it being sometimes referred to one point and sometimes to the other. There was a frequent and urgent desire to urinate, and the quantity voided was small. The bowels were somewhat tender upon pressure, and a tumour, at the lower part of the abdomen, to which my attention was directed for the first time, was found to be quite tender and painful. Upon a more careful examination of this tumour, it was found to be about the size of a large coffee-cup, and, as felt through the abdominal parietes, filling the hand, with the fingers a little flexed.

An examination per vaginam was now proposed, and, after much persuasion, my young patient yielded a reluctant consent. The examination at once revealed the whole difficulty. The hymen was found to be imperforate. An attempt was made to rupture it with the finger, but gave so much pain that I was compelled to desist.

On more particular inquiry I learned from the patient that she has had sick turns, *about once in a month*, for the last three or four months; being very similar to the present attack, except that the pains were less severe. The tumour had escaped notice until within three or four days of the present time.

Explaining to the patient and her attendant, as well as I could, the nature of her case, and the operation necessary for her relief, I urged its immediate adoption, as the only method of effecting a cure. To this, my young patient, who is a very modest and retiring young lady, could not, for a long time, be brought to yield her assent. But, after further conversation, convincing her that her restoration to health depended upon it, and that the operation would be attended with little or no pain, she concluded to submit.

She was directed to lie down upon the bed so as to have the parts concerned in the operation exposed to the light of a window. Cloths were then placed beneath her to absorb the fluid expected to be set at liberty by the incision. On exposing the patient the mons veneris was found to be covered with a luxuriant growth of hair. Separating the labia externa, at about the depth of an inch, the passage to the vagina was found to be completely closed by the hymen, at the upper part of which the termination of the urethra was plainly seen. The hymen was highly vascular, and *stretched evenly across the passage*, not being convex outwardly as might have been supposed from the pressure of the fluid above.

Taking a broad-shouldered lancet, I carefully dissected from just beneath the urethra, in a perpendicular direction, until I had pierced the membrane so as to admit the egress of a drop or two of the contained fluid. The lancet was now plunged through to the full width of the instrument, and another incision crossing the first at right angles, was then made. This gave exit to a jet as large as a pipe-stem, and which flowed, in a stream for some seconds, completely saturating the cloths which had been placed to receive it. This fluid was darker than venous blood, but not quite so liquid and entirely free from any coagulation. Judging, as well as I could, from the size of the jet, and the continuance of its flow, I supposed that very nearly a pint was evacuated. On searching for the tumour before mentioned, i was so much reduced as only to be detected by a very careful examination The pains had vanished, as if by enchantment, and the patient expressed herself as entirely relieved. The hymen was about half a line in thickness and very dense and tough.

A dose of morphine was now administered on account of the nervous irritability, which the exposure and the operation had induced, with directions to repeat the dose should the pain or want of rest, at night, require an anodyne.

From this time there was a moderate discharge for two or three days, when it ceased. The appetite directly returned, and the patient was soon well. Since the operation, the menses have appeared with great regularity, and Miss G. has enjoyed uninterrupted health up to the present time.

Mendon, Mass., *March* 9, 1845.

Art. X.—*On several important points in the Anatomy of the Human Larynx.* By Joseph Leidy, M. D. [With two wood-cuts.]

In the course of a series of investigations of the larynx of mammiferous animals, I was led to the discovery, so far, at least, as regards myself, of several anatomical points in the human larynx, which are not noticed in any of the systematic works on anatomy to which I have had access, and which I have deemed of sufficient importance to present to the scrutiny of anatomists and physiologists, with whom they should claim a greater share of attention than has yet been bestowed upon them, even if the observations be not new.

One of these points is the exact arrangement and relations of the thyro-arytenoideus muscle with the ventricle of the larynx and the thyro-epiglottideus and aryteno-epiglottidei superior and inferior muscles; the other, the extent and relations of the crico-thyroidean membrane.

Upon detaching one ala of the thyroid cartilage from its subjacent connections and throwing it forwards, and removing from beneath the layer of cellular tissue, an irregular layer of muscular fibres will be exposed, extending from the arytenoid cartilage on one side to the entering angle of the thyroid upon the other, and from the superior edge of the cricoid below to the tip of the arytenoid and side of the epiglottis above. Parts of this muscular layer constitute the thyro-arytenoideus, thyro-epiglottideus, and aryteno-epiglottidei superior and inferior muscles.

The thyro-arytenoideus muscle is generally stated as having its origin from the entering angle of the thyroid cartilage, and its insertion into the anterior part of the base of the arytenoid cartilage. But besides this, it will be found the superior portion of the muscle diverges upwards and backwards from its origin, in such a manner as to cover the inferior part of the ventricle of the larynx, and that the most anterior part of this divergent portion is inserted into the side of the epiglottis, constituting what is generally considered as a distinct muscle, under the name of the thyro-epiglottideus.

Passing from the tip, side, and base of the arytenoid cartilage to the side of the epiglottis, is a thin plane of muscular fibres, the superior and inferior edges of which are strengthened by an accumulation of fibres, forming the superior and inferior aryteno-epiglottidei muscles. The inferior edge, which was described a few years since by Mr. Hilton, of London, as a distinct muscle, is stronger than the superior, and is particularly important from its course over the upper part of the ventricle of the larynx. In the preparation, from which the drawing accompanying this paper was taken, this edge is more oblique than usual, and is reinforced by a strong muscular fasciculus from the thyro-arytenoideus muscle, a condition of things which I have met with several times.

It merely needs reference to the fact, that in the contraction of the muscular layer just described, as a whole, or in part, it must exercise a greater or lesser degree of compression upon the ventricle of the larynx.

Proceeding with the dissection,—if the muscular layer be raised up, the crico-thyroid membrane will be exposed. This will be found to have its origin from the inner circumference of the superior edge of the cricoid cartilage anterior to the arytenoid cartilages, and from the anterior part of the bases of the arytenoid cartilages, and to have its insertion into the inferior half of the entering angle of the thyroid cartilage. Its internal face is in contact with the lining or mucous membrane of the larynx, a good view of it being obtained by dissecting off the latter. Its anterior inferior part is thickened and pierced by several foramina for the transmission of blood-vessels; its superior edge is a little thickened, also, and is on a line with the inferior edge of the opening of the ventricle of the larynx, constituting what is generally described as a distinct structure, under the name of the inferior thyro-arytenoid ligaments or cordæ vocales, but which, as such, really do not exist. More properly this membrane cannot be considered to stop here, as it may be traced, though in a very thinned condition, over the whole of the periphery of the ventricle of the larynx, even so far as the pedicle of the epiglottis.

The crico-thyroid membrane throughout its whole extent is composed of the yellow elastic tissue similar to the middle coat of the arteries, and presents, under the microscope, a good example of this substance, by the aid of which instrument, in fact, I detected the existence of the membrane on the periphery of the ventricles of the larynx.

Not being partial to any peculiar theory in regard to the production of the voice, I present merely the ungarnished facts as existing in my dissections.

Fig. 1.

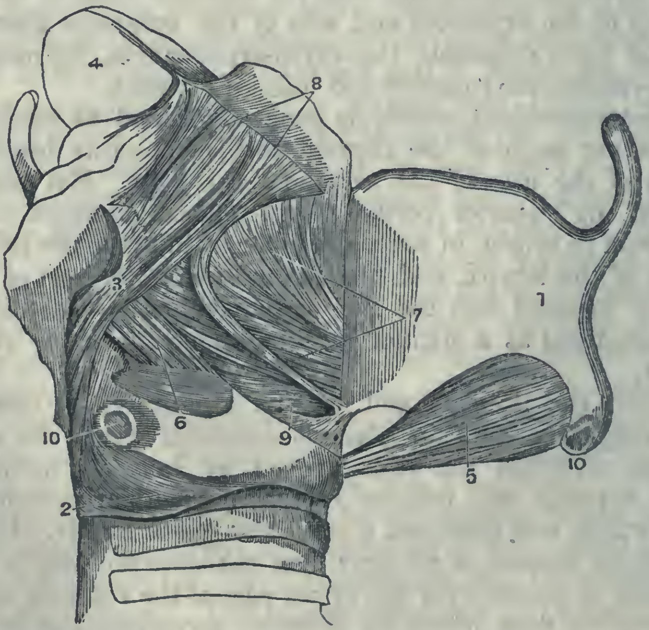

Fig. 1. 1. The right ala of the thyroid cartilage detached from its connections and thrown forwards; 2, the cricoid cartilage; 3, the right arytenoid cartilage; 4, epi-

glottis; 5, crico-thyroideus muscle; 6, crico-arytenoideus lateralis; 7, thyro-arytenoideus; 8, aryteno-epiglottidei; 9, inferior part of the crico-thyroid membrane; 10, 10, capsular articulation of the inferior cornu of the thyroid cartilage with the cricoid.

Fig. 2.

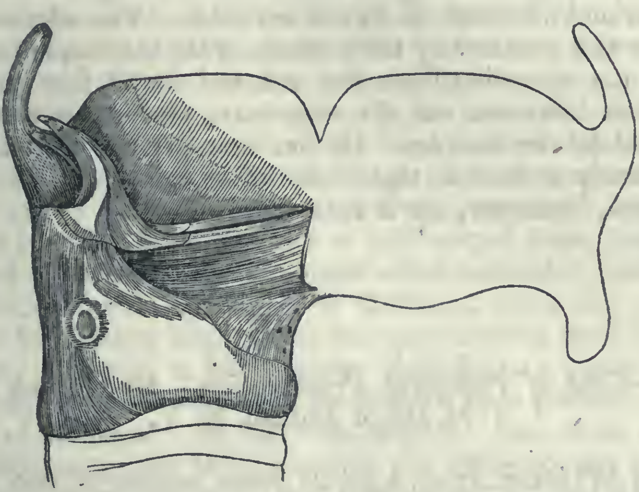

Fig. 2. Represents a lateral view of the crico-thyroid membrane.

Since writing the foregoing, I have seen the fifth volume of the *Encyclopédie Anatomique*, 1845, lately received in this country, in which I notice, on page 224, the following observation: V. Fibres élastiques. Un faisceau de fibres élastiques rayonnantes part de l'angle du cartilage thyroïde, entre les cordes vocales; ces partie antérieure et aux parties latérales du bord supérieur du cartilage cricoïde, sautent ensuite sur l'articulation crico-aryténoïdienne, et s'insérent à l'angle antérieur et au bord du cartilage aryténoïde. Elles entourent aussi les ventricules, pour monter vers les ligaments thyro-aryténoïdieus supérieurs, et trouvent des faisceaux de renforcement dans le ligament thyro-cricoïdien moyen et les cordes vocales. Lauth, *Remarques sur la Structure du Larynx et de la Trachée Artère.* (*Mem. de l'Acad. Roy. de Méd.*, Paris, 1835, t. iv. p. 95.)

Art. XI.—*Case of Congenital Inability to raise the Upper Eyelid cured by operation.* By Chas. A. Hall, M. D., of Burlington, Vermont.

John S. Landing, of South Island, Lake Champlain, consulted me, Feb. 1st, 1846, with reference to his son, a lad five years old, who had been troubled from his birth with an inability to raise the upper lid of the right eye sufficiently to admit rays of light through the pupil. This was productive of considerable deformity, aside from the habit which he had contracted of carrying the head backward and to one side, to enable him to see with that eye. After consulting with my father, Charles Hall, M. D., I informed him that the best chance of cure would result from an operation which I described to him. As the operation appeared quite simple, and would be attended with little or no danger to the eye, he readily consented to have it performed. Accordingly, Feb. 7th, he brought the boy to our office and I performed the operation, assisted by my father, in the following manner. After raising as large a fold of the integument of the lid as could be conveniently held between a pair of common forceps placed across the lid transversely, I excised the included portion with a pair of curved scissors. The space intervening between the cut edges was about three-fourths of an inch in width at its central point. The edges were brought in apposition and retained by three points of the interrupted suture. Three weeks after the operation I saw the lad, and found that the wound had healed by first intention, and the only scars perceptible were three small ones produced by the sutures. He has now perfect control over this lid, using it as freely as he does that of the other eye.

BURLINGTON, VERMONT, *April* 13*th*, 1846.

ART. XII.—*Case of Placental Presentation.* By GEORGE N. BURWELL, M. D., of Buffalo, N. Y.

MARGARET M'GUIRE, Irish, aged 21 years, mother of two children, sent for me Tuesday morning, October 7th, 1845, represented to be in labour and flooding. I learned she had had a turn of flooding four or five weeks before, which was very profuse, and she sent then for one of our Dutch doctors, who told her it was caused by her lifting a heavy child. She thinks she lost several quarts of blood before it was arrested. From that time until Sunday night, Oct. 5, there was continued slight hemorrhage. On Sunday night there was another large gush of blood; but little during Monday. On Monday night, Oct. 6, it was again very free, amounting, she said, to at least two or three quarts. Her clothes and the bed were completely soaked in blood. On Monday night there was pain for the first time, which she thought to be the commencement of labour. Her full time would have been up, according to her reckoning, Oct. 9th, two days after I was called to her. She had had for two months a pain across and over the pubes, which made all walking painful; and she could never go far without an uncontrollable desire to urinate. She had not been able to do any work of consequence for six or eight weeks.

I found her without pain; face and skin generally pale, and of a waxen tint; eyes dull, with a dark circle around them; lips and nails purplish; skin generally relaxed, and covered with a cold perspiration; which, as turns of faintness came on, would increase until it stood in drops on her forehead and lips; pulse 128 to 132, regular, but very soft and compressible; no thirst; her general appearance, as she lay on her bed was languid and abandoned; she complained of turns of great indistinctness of objects about her, of some flushes of heat over her, and still more of a sense of chilliness along the spine. I found the os uteri one and a half or two inches in diameter, and yielding; the placenta three-fourths or four-fifths over it; leaving an opening between it and the anterior lip of the uterus, through which I could feel the head, but not the sutures; membranes entire; coagula in the vagina; but little hemorrhage at the time. I left her for a short time to call my father in counsel, enjoining perfect rest. He ruptured the membranes on his first examination; the waters escaped very slightly tinged with blood, and with two or three light pains, during one of which she nearly fainted; indeed she herself and her friends thought for a moment that she was dying. There was only a slight drainage of blood after the waters came away, not amounting to more than three or four ounces in all, until she died. The membranes were ruptured at 9½ o'clock. The head descended so the sutures could be felt, and the os uteri lost that yielding character it had, and felt more rigid and unyielding, as though it were put upon the stretch; such as I have frequently noticed in common labours after the evacuation of the waters before full dilatation. The pain ceased, and the faintness and exhaustion increased. Ergot was next given, both in powder and infusion, at short intervals, for an hour, without any effect. Brandy was given also, freely; cloths were kept to the vulva, by which we could ascertain the amount of the flooding. Perfect rest was enjoined. She was kept in one position (on her right side) for three hours, without once changing it. She soon fell into a half stupid state, lying with her eyes closed and apparently asleep, except when aroused to take her stimulants; or when overcome by a sense of faintness, when she would rouse up with two or three deep respirations, but soon sinking back into her apathetic condition. Finally, at half past two o'clock she vomited, apparently all she had taken during the forenoon; there was a large quantity of it, having a strong smell of the brandy she had been taking. Her pulse immediately increased in frequency; she called out that she believed she was fainting, and threw herself on to her back; she complained of oppression and distress about the diaphragm; her nostrils began to play freely at every breath; a cry accompanied every expiration; her breathing became more and more rapid and short; her eyes rolled up; her face became rapidly more and more sunken; the pulse was soon lost entirely; and shortly she ceased to breathe, except a slight and short heaving of the chest accompanied with some rattling or gurgling in the throat, which continued, at intervals, for fifteen or twenty minutes.

I took the child from her four hours after her death, by the abdominal section. It lay in the first position of the vertex, with the cord twice around its neck. The placenta was attached to the posterior part of the cervix-uteri, with an edge over the mouth of the womb. Every tissue of her body was as blanched as it could have been. The knife had scarcely a stain of blood upon it. There was not the least particle of red tissue in the uterine muscle. The entire peritoneum was as white and blanched as though it had been soaked in water. There was about a teaspoonful of the coagula of blood about the child's abdomen, but no serum nor other evidence of internal hemorrhage. Neither its limbs nor body had the least tinge of blood upon them. The corpse was very warm; in fact, it was warmer apparently than before death. There was not the least muscular rigidity about the body.

Dr. Josiah Trowbridge was added to the counsel about 11 o'clock.

The foregoing was one of those cases calculated, in an especial manner, to try the skill and discretion of the practitioner. The woman heedlessly, and totally unaware of her danger, had allowed the flooding to go on without calling for help, until all the constitutional symptoms of hemorrhage had come on in a high degree. The faintness did not follow a single gush of blood, from which it might be expected she would rally by the use of cordials and stimulants, but it was the result of a long continued drainage of the *pabulum vitæ*, until there was not enough left to keep the machinery of life in motion; and, of course, its working became feebler and feebler as the faintness became more and more profound, until after a sudden but ineffectual struggle for existence, it ceased altogether.

Governed by the obstetric maxim, never to allow a woman to die undelivered, and thinking only to reach this end, we ought to have turned and delivered at once, instead of rupturing the membranes; but hoping that she would rally after arresting the hemorrhage, and feeling that she would die during or soon after the operation, from her continued faintness, we preferred to let off the waters, and to apply the binder to produce contraction of the uterus, and to make the head act as a plug, (in which we succeeded); to assist this contraction and excite pain by ergot, (in which we failed); to give stimulants, (which did not at any time have the slightest effect upon the circulation); and trust to these means and to nature to rally her from her prostrate condition, and cause sufficient pain to force the head within the reach of the forceps. The unfortunate result has been told. How different might it have been had she sent for assistance immediately at the commencement of the hemorrhage, on Sunday evening.

Art. XIII.—*Report of the Medical Society of Virginia, on the supposed Hemostatic Properties of the Brocchieri Water.*

The committee appointed at the last meeting of the society to investigate the styptic qualities of the Brocchieri water, have performed the duty assigned them, and have instructed me to make the following report.

Believing that all experiments made with the Brocchieri water alone, without at the same time testing the relative effects of other styptic remedies, or the unaided hemostatic powers of nature, must be unsatisfactory, and that all of the experiments hitherto performed with the Brocchieri water, as reported to have been made in New York and Baltimore, by Dr. Barrabino, of the U. S. Navy, and others, and on which the alleged virtues of this remedy are mainly founded, have been conducted in this manner, the committee have endeavoured to avoid this source of error, by instituting a series of parallel experiments, by which they think they have been able to arrive at a very satisfactory estimate of the merits of this so called remedy.

The only means by which we can conceive that hemorrhage from an incised or ruptured vessel can be arrested is either by the coagulation of the blood, or by the contraction of the vessel. The committee have endeavoured to test the styptic qualities of the Brocchieri water, by its power of producing either of these two effects.

To ascertain whether the remedy has the power of coagulating blood, one experiment alone was necessary, which was performed as follows:—

Experiment I.—Two equal portions of arterial blood were taken from an incised wound; to one a portion of Brocchieri water was added: the other was left undisturbed. There was *no appreciable difference* in their periods of coagulation.

The following experiments were then made (Experiment II.), to test the positive power of the Brocchieri water to arrest hemorrhage, and (Exper. III., IV. and V.,) to test its power of arresting hemorrhage as compared with the unaided power of nature, and with that of simple cold water.

Experiment II.—A longitudinal incision three inches in length was made, after removing the hair from the part, in the left thigh of a healthy dog; there was free venous and arterial hemorrhage. A pledget of charpie saturated with the Brocchieri water was introduced, and the water freely applied for some minutes, when the integuments were drawn together by one suture. In eight minutes the bleeding had apparently ceased; on examining the wound, twenty-five minutes after the incision, some other experiments having, in the mean time been performed, it was found to be bleeding freely.

Experiment III.—Two transverse incisions were made upon the right thigh of the same dog, about an inch and a half long, and two inches apart, as nearly alike as possible. There was very little bleeding from either at first; but in about a minute, they were both bleeding freely, and, as far as could be judged, nearly to the same extent. Charpie fully saturated with the Brocchieri water, was applied to one, and the water poured upon it; the other incision was permitted to remain without any application. In eleven minutes from the time of the incisions, the hemorrhage had ceased from both wounds, except some slight oozing, which continued equally from both; there was a coagulum formed in both wounds, which appeared to have about the same consistence in each.

Experiment IV.—The left carotid artery of the dog was next exposed, by making an incision of two inches and a half in length, along the inner margin of the sterno-mastoid muscle, and an artery needle armed with a ligature passed under it, separating it from the jugular vein, and enabling us to raise it freely; compressing the artery at its lower part, a transverse incision was made into it with a pair of scissors, cutting rather more than one-third of its circumference: on removing the pressure from below, the artery bled profusely; charpie fully saturated with the Brocchieri water was immediately applied, and kept firmly pressed upon the artery for sixteen minutes. Upon removing the pressure, the artery was still found to bleed; fresh portions of charpie saturated with the Brocchieri water were applied, and the integuments drawn together by three sutures, thus keeping up some degree of pressure upon the artery. The dog was then removed from the table, was able to walk about, and seemed less exhausted than was to have been expected. In the course of five or ten minutes, the bleeding seemed to have ceased; but in an hour and a half it returned, while the dog was lying quiet, and he died apparently from the loss of blood, three hours after the experiment was begun. Upon dissection, there was a large coagulum in the wound; the artery was found incised rather more than one-third of its circumference, and perfectly free from coagulum, and the par vagum nerve was cut.

Experiment V.—The left carotid artery of a large and vigorous dog was exposed in the same manner as in the last experiment, a needle passed under it, and pressure made so as to arrest the circulation. The artery was then divided transversely, with a pair of scissors, making the incision as nearly like that in the preceding case as possible. On removing the pressure from below the hemorrhage was very profuse, more so than in the other case, owing probably to the more vigorous state of the circulation in the last animal. Pledgets of charpie saturated with *cold water* were introduced into the wound, and pressure kept up for fifteen minutes; on removing the pressure, the bleeding was found to continue, when additional portions of charpie were introduced, and the edges of the wound united by three sutures. The animal was removed from the table but little exhausted, the wound still bleeding a little; in the course of five minutes all bleeding had ceased. The dog lived apparently in good health for twenty-four hours after the operation, having in the mean time eaten the food which was given to him, and appearing as lively and in as good condition as before the operation. At the expiration of that time, a dose of strychnine was given to him, of which he died in about twenty minutes: it is worthy of note that, during the violent convulsions produced by the operation of the strychnine, by which the lint was pressed out from between the sutures, no hemorrhage at all occurred. Upon dissection the wound was found filled with a firm coagulum, and the artery incised rather more than one-third of its circumference, but free from coagulum.

There are three other experiments, performed on *human* subjects, which have come to the knowledge of the committee, which they deem it proper to bring to your notice, two of them performed under the eyes of members of the committee, and the other communicated to us by two responsible members of the profession.

Experiment VI.—A child had an appendage to each of its little fingers amputated by Dr. Haxall; the incisions exposed a nutritious artery in each, which bled very freely. He applied the Brocchieri water upon lint, and continued the application for about fifteen minutes without any appreciable diminution of the hemorrhage; these applications were then removed, and the wounds were dressed with dry lint confined with a bandage; the hemorrhage was arrested in a few minutes.

Experiment VII.—In a case of ectropion in the infirmary of the medical college, an oval piece of the everted conjunctiva was cut out; a large mass of vessels being thus cut, free hemorrhage took place. Charpie saturated with the Brocchieri water was applied, and the water freely poured upon it for about five minutes; no appreciable effect was produced by the application, and at the end of twenty-five minutes, the wound was still bleeding. The ordinary dressings were then applied, and the hemorrhage soon ceased.

Experiment VIII.—Drs. Chamberlayne and Conway were called to a patient with a wound in the scalp; a circular portion of the scalp upon the posterior lateral part of the parietal bone was found cut out, and a branch of the occipital artery was bleeding freely. The Brocchieri water was applied to the wound upon patent lint, and the application kept up for fifteen minutes, with no appreciable effect upon the flow of blood. These applications were then removed, and the wound dressed with dry lint; in a few minutes all hemorrhage ceased.

The committee are of opinion that, from these experiments, the following conclusions may be drawn:

1st. From Exper. I., that the Brocchieri water has no power of coagulating blood.

2d. From Expers. IV., VI. and VIII., that the Brocchieri water has no power of producing contraction of the coats of an artery. And having established these two facts, as coagulation of the blood and contraction of the artery are the only means by which we can conceive that hemorrhage can be arrested, we might have terminated the investigation. But to apply these experiments practically—

3d. We conclude, from Expers. II. and III., that the Brocchieri water does not arrest hemorrhage from an incised wound sooner than the unaided powers of nature would accomplish the same result.

4th. From Expers. IV. and V., we conclude that in incised arteries, the application of the Brocchieri water is no more to be depended upon to arrest the hemorrhage, than that of simple cold water. In both of the above experiments, (IV. and V.), the artery was severed through more than one-third of its circumference, and the bleeding was profuse, but in both the bleeding was arrested at the end of twenty minutes. In the first, the hemorrhage returned, and the dog died three hours after the operation; in the second, the animal lived in good condition for twenty-four hours, and, in all probability, would have ultimately survived. The only difference in the two cases was, that in the first, the par vagum nerve was cut; but we do not think that this could have had any effect in producing a return of the hemorrhage.

The true and the only cause of the arrest of the hemorrhage in these cases, as in all of the cases which have been reported is, in the opinion of the committee, *pressure*, the pressure being continued for a sufficient length of time to allow a coagulum to form, which will be firm enough to resist the impulse of the blood from the orifice in the vessel.

In connection with this subject, it will be interesting to examine the experiments made by Cæsar Hawkins on the celebrated styptic of Talrich and Halma-Grand, from which he arrives at the same conclusion that, in all the reported cases of cure by this remedy, the efficient agent was pressure. (Vide *London Medical Gazette*, vol. ix. p. 673. Feb. 4, 1832.

CARTER P. JOHNSON, M. D.
G. G. MINOR, M. D. } *Committee.*
R. W. HAXALL, M. D.

As to the first two experiments.

REVIEW.

Art. XIV.—*Scrofula; its Nature, its Causes, its Prevalence, and the Principles of Treatment.* By Benjamin Phillips, F. R. S., Assistant Surgeon to the Westminster Hospital. Illustrated with an engraved plate. London, 1846, 8vo. pp. 379..

This work comprises a larger amount of novel and cautiously investigated facts in relation to the etiology of scrofula than any that have yet appeared. In his examination of the causes and prevalence of the disease, the author has evidently expended a large amount of time and labour, the fruits of which have been rendered still more valuable from the commendable caution he has evinced in distinguishing between facts and suppositions, actual observations and the results of loose conjectures or popular misconceptions. The conclusions to which Mr. Phillips has been led are adverse to many of the generally received opinions in reference to the diseased condition of which he treats, and even should all his inferences not be confirmed by future more extended observations, still his work must be received as one of the most valuable contributions to pathology with which the profession has for a long period been presented.

Some idea of the labour which the author has bestowed upon his subject,—the extensive limits to which his inquiries have extended—and the caution with which his investigations have been prosecuted, may be derived from the following extract from his introductory chapter.

> "My position at the St. Marylebone infirmary was singularly favourable for the observation of scrofulous affections when fully developed; but the field was too limited for the study of their causes. It, therefore, became expedient so to enlarge my sphere of observation, and so to extend my inquiries, as to comprise the influence of the many causes, which, it is alleged, are capable of producing the disease.
>
> "To ascertain how far and how constantly scrofula prevailed in the metropolitan districts, I visited a large number of the national schools, the parochial establishments, and the charitable institutions which are found in every part of the metropolis. I was thus enabled to determine whether the healthier and wealthier localities of St. George's, Hanover Square, St. Marylebone, and Kensington were more lightly visited by the disease than the comparatively poor and unhealthy districts of Shoreditch, Bethnal Green, St. Giles, and the lower part of Westminster. Having ascertained, as far as was practicable, the condition of the population of the metropolitan districts, where the effects of close packing may be expected to be keenly felt, I pursued the inquiry through districts where the population was widely spread, and I was thus enabled to compare the condition of the people living under very different circumstances, and to ascertain the influence of crowding upon human life, in so far as concerns scrofula. I extended the investigation to the mining and factory districts, with a view to determine how far particular occupations tended to develop the disease. I caused children to be examined in the north and the south, the east and the west of our own country, so as to be able to estimate the influence of particular localities in our own island to determine the affection; and I extended my researches throughout Ireland and Scotland, so as to be enabled to estimate the influence of particular articles of food,—and the correctness of the evidence so obtained has been, to a certain extent, tested by the condition of recruits, and of persons committed to prisons; by the mortuary tables of the Registrar-General, so ably analyzed and arranged by Mr. Farr:

by those of the Irish census, so well digested by Mr. Wilde—in so far as they could be made available in an inquiry like the present—and by a large number of hospital and dispensary returns.

"Having obtained a fair estimate of the condition of the people of this island, with reference to scrofula,—having ascertained their condition in factory and other towns, and in rural districts,—inland and on the sea coast,—whether living on bad food or better,—entirely vegetable, as in Ireland, or more animalized, as in portions of England,—in union houses, or among the independent population,—I came to certain conclusions as to the causes of the great difference which was found to exist between one district and another. But I soon found, that important as the inquiry must prove, even when bounded by our own shores, its value would be increased if its limits were enlarged. It was by such an extension alone that I could test the influence of varying climates and habits, and ascertain whether the cold of Russia called the disease into existence more frequently than the heat of the countries bordering upon or lying within the torrid zone; whether the humidity of Holland be more prejudicial than the comparatively dry atmosphere of Spain and Portugal; the marine atmosphere of our own land, than the inland atmosphere of central Europe.

"Through the kindness of Lord Aberdeen I have obtained most valuable reports from Russia, Austria, Prussia, Bavaria, Portugal, and Holland. I have acquired important information from the northernmost portions of Europe, as well as from France and Belgium; and in Bavaria, Belgium, France, Tyrol, and Switzerland, I have been enabled myself to verify the accuracy of the information with which I had been furnished. I have also obtained returns of the condition of children in so much of the United States of America as is found on its eastern shores between Boston and New Orleans; from a certain portion of the Bengal Presidency; from some districts in China; and from portions of Egypt, Syria, and Greece, abutting on the Mediterranean sea, and from Madeira. The accuracy of the information to which I have referred, inasmuch as concerns the influence of climate, has been, as far as possible, tested by the admirable reports of Colonel Tulloch, which so well show the influence of climate to induce particular forms of disease in the British soldier.

"Besides all these sources of information, I have consulted, so far as I knew them, all the written works which bore on the subject, and I have adopted any views which they contain after satisfying myself that they were correct."

We considered it necessary to present the foregoing long extract in order to indicate the amount and kind of information from which the deductions of the author have been drawn, as the value of the latter can alone be tested by the extent and accuracy of the data upon which they are based.

Valuable as we esteem the work of Mr. Phillips, it will unquestionably disappoint many of those who consult it, from the fact that the subject of scrofula is only considered in a general view,—the various structural diseases which may occur in a constitution contaminated by scrofula, being left out of the present inquiry. In fact the author has almost exclusively confined himself to a few only of the manifestations of scrofula,—namely, to intumescence, inflammation, suppuration, or ulceration of the glands of the neck, and the peculiar scar or sinuses consequent upon scrofulous disease of these parts; and to the scrofulous affections of the joints and bones: and we fear that some of the data upon which his leading conclusions are based have been rendered imperfect by this very limitation of the signs adopted by the author as indications of the scrofulous condition of the human frame. If we should define scrofula as that particular morbid condition of the animal system which predisposes to the deposition of a particular abnormal substance into one or other of the tissues, and this we conceive the most accurate definition,—can we arrive at any legitimate conclusions as to the general causes and prevalence of scrofula unless we take into account all the cases in which such a deposition takes place,—

whether it be in the lungs, cervical or bronchial glands, brain, bones, or other organs.

"That condition of the economy which is favourable to the formation of scrofulous, is not, however," according to Mr. P., "scrofula, but only a diathesis, or disposition; it may exist long, it may cause the tumefaction of many glands, but, under favourable circumstances, it may disappear without the deposit of a single particle of that product, whose presence in the glandular structure is," he conceives, "necessary to constitute scrofula. Again," he remarks, "the condition of the system favourable to this deposit is marked by *no certain* external sign up to the moment when the glands became tumid. The child may be fair or dark, pallid or ruddy, well fed, clad, and lodged, or all these may be the worst possible,—he may be the child of wealth or poverty,—he may live in town or country,—he may be the child of old or young, of healthy or sickly parents,—he may be born and live within the tropics, or in the arctic circle; under all these circumstances, as we shall see hereafter, scrofula may be developed. What circumstances tend most to its production we shall endeavour to show when we come to the study of causes. At the same time," he adds, "we are bound to admit that the condition of the system which we have described as indicating the predisposition to scrofula, is one which favours the deposit of the particular product in many parts of the body; in one case in one organ, another in another. If, for experiment, two animals be submitted to the influence of exactly the same causes of evil, the results of that influence will probably be very different. In one instance a particular organ is the principal sufferer; in another, the same organ has escaped comparatively free from disease,—and it is often difficult to assign any explanation why these results should differ so widely from each other. But it is certain that most morbid deposits are the result of perverted nutrition—and where the condition is developed which is favourable to their production, particular circumstances will determine them upon one organ or another."

It is evident, therefore, that we cannot determine accurately the causes and prevalence of scrofula generally, by confining our inquiries to one, and that *probably* not the most common of the forms under which it manifests itself.

The first chapter treats of the term scrofula,—its signification and its derivation,—and comprises also a very interesting notice of the ideas with regard to the disease entertained by ancient authors. In the second chapter the author presents his own views of the nature of scrofula.

He conceives that it is a disease of the constitution, and that it is most clearly manifested by certain external signs, of which *swelling of the subcutaneous lymphatic ganglia is* the most conclusive. "When," he remarks, "one or several cervical glands became tumid, in the apparent absence of any obvious local irritation, this would constitute a strong ground for suspicion that the constitution was suffering under the taint of scrofula. It would not, however," he adds, "amount to more than suspicion, and the suspicion could scarcely receive absolute confirmation, unless we have the opportunity of observing the contents of the tumour itself. Unless the swelling of the gland be accompanied by the deposit of a product, hereafter to be described, known as *scrofulous matter*, the proof, in the author's judgment, of a scrofulous constitution is wanting."

It is mainly to the state of the cervical glands as an indication of scrofula that the inquiries of Mr. Phillips have been directed, as will be perceived by the following extract from his introduction.

"At an early period I became fully sensible of the necessity of introducing a more precise method of conducting the inquiry than any which had been previously adopted. To say that scrofula is extremely frequent in one place, and rarely seen in another, is to make a statement which has no absolute value, because, so far as I know, it has always been made without particular observation or accurate comparison, and yet it is upon such statements that theories are constructed.

"To determine, from an examination of a particular district, that a given agent is the cause of scrofula, because such agent is there found in connection with the disease, whilst in another district, from which such agent is absent, the disease prevails to nearly the same extent, is a mode of investigation which has been adopted by persons who have treated ex-professo of the disease, but cannot satisfy the wants of the present day. Early impressed with the fact that what was alleged as *the* cause by one author, was *proved* to be no cause by another, though the features of the disease might be equally well described by both, I determined to accept no statement of the causes, the prevalence, or the treatment of the disease, which was not the result of precise observation."

"I, therefore, thought best to adopt a definition which should include points upon which all seemed agreed about the lymphatic temperament, and to exclude those about which there was less accordance. The same course was taken in defining what was meant by ordinary marks of scrofula; I therefore requested to be informed how many presented fair hair and eyes, and fair, soft skin. I am quite aware that cases of what is called lymphatic temperament may not be included in such a definition, and that cases which would not be regarded as belonging to that category might be included in it. But this seemed the smaller evil of the two, and it has the merit of securing something like uniformity in the results. There can be no question that what is called by many persons the lymphatic temperament, is a constitution upon which scrofula has impressed its seal. In a tenfold degree was the necessity urgent for defining what I meant by ordinary marks of scrofula, because some persons regarded diseases of the scalp, as well as those of other portions of the cutaneous envelop, as evidence of scrofula. I therefore defined ordinary marks of scrofula to mean enlarged glands, discoverable by the touch, or the sight, sinuses or ulcerations resulting from them, and ordinary scrofulous bones or joints."

"It is true that the returns received may include some cases in which the enlarged glands may have been owing to some local irritation, but this is as likely to occur in one district as another,—and therefore, the value of the return will not be invalidated by such an accident. It is also true, that passing enlargement of the lymphatic glands is not always regarded as scrofulous, even in the absence of local irritation; but I am satisfied that the state of the constitution which favours the development of such glandular swellings is one which, if sufficiently long continued, would commonly end in unequivocal manifestations of scrofula,—and, therefore, I have desired to include in my returns all cases in which sensible enlargements existed. Happily the constitution of the sufferer does commonly change; and of twenty persons suffering from sensibly enlarged glands, in scarcely more than one will they proceed to suppuration. In those cases, therefore, or at least in an overwhelming majority of them, no scrofulous matter is deposited in the glands; but as the state of enlargement is only a previous stage in the development of scrofula, and as it is impossible, from a surface examination, to say whether the deposit has actually taken place or not, it seemed to me best and safest to draw the line where I have done it. And at all events it does not make out a less than actual prevalence."

Having thus placed before our readers the exact class of cases to which the investigations of Mr. Phillips refer, and the general plan according to which that investigation has been conducted, we shall proceed to take a hasty survey of the facts he has collected, and the conclusions he has drawn from them.

The author restricts the term scrofulous, and we conceive with great propriety, to those affections in which there takes place a deposit of scrofulous matter. The diseases regarded as scrofulous, in which no such deposit occurs, he considers, not to be scrofulous at all, but simply the result of such low inflammatory action as is often set up in a debilitated state of the constitution.

He knows of no certain sign by which the state of the constitution which precedes the deposit of scrofulous matter can be recognized. He is atisfied, from the result of personal observation, that there is the utmost variety in the external characters of those who present undoubted scrofulous aint. The hair and complexion may be either light or dark—the cheeks osy or pale,—the alæ nasi expanded, and the upper lip tumid or the very reverse. There is usually, but not always, a want of muscular development—often there is an appearance of plumpness resulting from the hypertrophied or infiltrated condition of the cellular tissue, which rapidly disappears under fatigue, privation, or disease.

"Commonly, there is a general paleness and coldness of the surface of the body, which is owing to a feeble circulating apparatus; but in a large number of cases, about one-fifth of the whole, that paleness does not extend to the face." "There is not, as some persons have supposed, anything constant in the shape of he lower jaw, or in the appearance of the teeth. The abdomen is commonly umid. The whole of the mucous surfaces are especially liable to derangement; discharges from the nose, the eye, and the ear, are common. The digestive mucous membrane affords early indications of suffering; the tongue has commonly a dirty whitish coating, the tonsils are usually enlarged, and they are often so umid as to impress a disagreeable and frequently husky character upon the voice, and to cause snoring when the patient is asleep. A still more deleterious influence is exercised by these tumid bodies; they lessen so much the channel for the passage of the air, in respiration, that the sufficient development of the chest may be interfered with. The stomach and bowels are frequently disordered, and digestion is ill performed,—acrid eructations are common, flatulence is often very roublesome, and the action of the bowels is very irregular, sometimes relaxed, at others constipated,—sometimes the evacuations are clay-coloured, very offensive, and of varying consistency; at others, having a redundancy of bile. Similar evidences of derangement are observed in the air passages, commencing at the nose—which exhibits increased secretions upon the occurrence of very slight variations in temperature—and passing through their whole length. Similar phenomena are observed in the mucous tissue of the genito-urinary system; the bladder often shows an impatience of the presence of the urine, and the desire to void it is often frequent. The skin, though often dry and hard, is sometimes the seat of a considerable greasy exhalation,—sometimes it is found to be fetid and sour. The acidity of the exhalation may be so decided as to determine a reaction upon litmus paper. The scalp and other parts of the cutaneous integuments are often the seat of eruptive affections. The absence of vascular and muscular energy often causes the child to lie and sit about much, and indisposes him to enter into the energetic games of his playfellows. As to the intellectual development claimed for scrofulous persons, I am bound to say, that it is usually wanting. That many scrofulous children present that character is quite true; but the result of very careful observation has convinced me, that the overwhelming majority are without those superior intellectual qualities which have been pointed out as their ordinary character."

In a constitution *favourable* for the deposit of scrofulous matter, Mr. P. believes, that in the absence of tumefaction of the subcutaneous ganglia, there are no features so constant and so conclusive as to justify a reliance upon them, in pronouncing an opinion whether a constitution be scrofulous or not. We may even have enlarged glands, while no scrofulous matter is deposited; although, in the absence of irritation, he conceives, that enlarged subcutaneous glands constitute grounds for grave suspicion that the constitution is scrofulous. Nevertheless, the deterioration of the system proceeds so slowly, that although the tendency be directly onwards from the period when the gland is simply enlarged, to that when the deposit would ordinarily occur—in that interval, favourable or unfavourable circumstances may be experienced, and no deposit may take place. On the other hand, the constitution may improve, and the glandular swelling may subside,—

on the other, the ailing child's life may be cut short by other diseases before the proof of scrofula is complete.

> "In childhood, the time necessary for the perfect development of the disease is, Mr. P. believes, very long; so long as to build up the whole body with bac materials. In adult life, the time is still more considerable; so that although ir each case the causes of the disease may be efficient, their influence may not be continued long enough to bring about such a change in the constitution as fits i for the development of scrofula; and if they be not so continued, the swellec glands may subside, and the person may escape the deposits, or the causes of ill health becoming more intense, he may die of some more acute disease."

The third chapter treats of the physical characters of the scrofulou deposit. As Mr. P. defines scrofula to be a disease, manifested by a peculiar deposit in the subcutaneous lymphatic glands, it is to the deposit as i occurs in the latter, his examination is confined.

According to our author, a gland about to become the seat of such deposi undergoes a change in structure, dependent on increased action alone. Th matter may be deposited at several points of the gland—these points enlarging, may ultimately coalesce, and the intermediate tissue of the gland disappears.

It sometimes, but very unfrequently, happens that the matter deposite in the lymphatic ganglia, presents at an early period, an appearance no unlike that of the gray, translucent, tubercle-like matter found in the lungs Most commonly in lymphatic ganglia, there occurs no intermediate stag between the simple enlargement, induration and increased vascularity, anc the occurrence of the deposit of opaque scrofulous matter; which, to th naked eye, appears as an amorphous, grayish, buffish or yellowish mass irregularly granular, and not unlike moist old cheese.

Mr. P. presents the microscopical characters of scrofulous matter as described by Albers, Bredow and Ruette, and also the results of the microscopical examinations of MM. Dalrymple and Gulliver, undertaken expressly at his request. According to Mr. Dalrymple,

> "The whole material is composed of disintegrated tissue, granular molecule irregular exudation corpuscles, and in which the nucleolus is seldom to be recognized, and a considerable quantity of oil globules, which may be extracted b boiling æther, and recovered by evaporation on a plate of glass."
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> "In the human subject," remarks Mr. Gulliver, "it appears to me that crud tubercular matter, from whatever organ obtained, differs as little in its microsc pical as in its general and chemical characters. When examined by the aid the microscope, crude tubercular matter can scarcely be said to present any regu lar structures, as it is merely made up of minutely granular matter, oily spherule some shapeless albuminous flakes, or shreds, and a few irregular corpuscles,- the latter are probably nothing but effete, or shrunken primary cells."

In the ensuing chapter (4th) is examined the state of the gland in whic the product is about to be deposited. After noticing the fact, that com monly, if not always, granular structures, previously to scrofulous matte being deposited in them, acquire a considerable increase in volume, in den sity, and in vascularity, Mr. P. remarks that a point of considerable interest here presented, whether, namely, the state of the gland is the result of th changed condition of the blood circulating within it, or is independent the blood—whether the blood fits the organ to receive the deposit, or th organ fits itself.

> "If the action depends only upon a general contamination of the blood, ho comes it that all the lymphatic glands are not equally affected? It is notorious th they are not. The bronchial glands are affected more than twice as often as tho

f the mesentery, the latter four times as often as those of the neck, though in any respects less exposed, and the last named glands four times as often as those f the axilla and the groin. There must be a reason for this. It may be that the ause of the greater frequency in the glands of the mesentery, is the irritation set p in them by depraved chyle, the result of bad food or improper feeding; which ate may be kept up until the blood is sufficiently charged with improper materials occasion a deposit to be made; and I apprehend the cause of the greater fre- uency of the deposit in the cervical than in the inguinal or axillary glands is, at they are more exposed to alternations of temperature and to irritation; that, erefore, cæteris paribus, under the same amount of constitutional irritation, con- estion is more rapidly developed in them, and therefore, the deposit is more fre- uently found in their substance."

Mr. Dalrymple, after a careful examination of a scrofulous cervical gland, ays,—

"The enlarged gland appears to consist of a general parenchyma in a state of hronic inflammation, surrounding irregular masses of a yellowish-white matter, ore immediately the subject of examination. In direct proximity to the edges f this white material, the blood-vessels are seen to be more enlarged and con- ested than elsewhere, and in some parts, the capillaries are occluded with co- gulated blood. The parenchyma, which at first sight appears healthy, is, on xamination with high powers, found to be infiltrated with exudation corpuscles, esembling lymph globules. The natural texture of the gland consists of its roper corpuscles, filamentous tissue, blood-vessels, lymphatics and nerves. In his morbid specimen, everywhere is the filamentous tissue infiltrated, and its ibres separated by innumerable exudation corpuscles, and the proper corpuscles f the gland are similarly surrounded and imbedded. As the parenchyma is earer to the white matter, so proportionably do the proper corpuscles of the gland ecome more indistinct, the filamentous tissue more obscure, the blood-vessels rregularly dilated, and filled with red-globules, and they at last disapper insensibly. he exudation corpuscles are more numerous, but irregular in size and shape, and nterspersed with minutely granular matter."

That the state of hypertrophy, with increased vascularity, is inflamma- ory in its nature, the author conceives must be admitted, inasmuch as exu- dation corpuscles can be detected before any scrofulous matter is deposited.

This state of the subcutaneous glands, according to Mr. P., can be de- ected in one-fifth to one-sixth of the juvenile population of Great Britian. In probably nine cases out of ten, the intumescence of the gland, thus produced, completely subsides, so as to leave no trace of its existence behind it. Thus, while enlarged glands are perceptible in more than twenty per cent. of the juvenile population in England and Wales, they are not found to proceed to suppuration in more than two per cent. of that population. And this subsidence, Mr. P. assumes, as a proof that no scrofulous matter was deposited, because he has no reason to think that when scrofulous matter is deposited in any structure, it can be removed by any process of absorption; hence, when the deposit has once taken place, the swelling it occasions must remain until the matter is ejected.

In chapter five is examined the source from whence scrofulous matter is derived. The author first inquires, whether there is any foundation for the notion that scrofulous tumours are ever produced by thickened lymph. After a careful investigation of all the facts bearing upon this question, he comes to the conclusion that, although there is nothing in the character of the deposit in the mesenteric or subcutaneous glands, to make it impossible that such deposit may result from the chyle or lymph passing through them, as was maintained by the older writers, that glandular tumours are but very rarely formed in this way.

It being admitted now that morbid products are derived from the blood;

the author examines next the following questions.—Has the blood previously undergone a change in its elements, the part in which the deposit is made remaining unchanged? Or, does the blood remain in a healthy condition, the part in which the deposit is made exercising a specific influence upon the blood, and determining the character of that deposit? Or, are both removed from a healthy condition before the product is deposited?

Mr. P. has examined the blood in sixty-seven instances of scrofula, and although he has almost always observed a considerable deviation from the condition of healthy blood, the changes have not presented sufficient uniformity to induce him to regard any particular condition as specially characteristic of scrofula; the changes being such as seem to belong to a tolerably extensive group of affections, all, it is true, being connected with disordered nutrition and debility. He admits, therefore, that he is unable to point out any particular state of the blood which is certainly characteristic of scrofula. Whenever the marks of scrofula are evident, he has found the altered condition of the blood to be also evident, still he has been unable to indicate any special change in the blood which clearly marks the existence of scrofula.

> "Whether," he remarks, "that change in the condition of the blood which is demonstrable when the existence of scrofula is evident, and which can also be demonstrated when the existence of the disease in the constitution may be presumed, though the local manifestation is wanting, does really stand to scrofula in the relation of cause, I cannot, as I have already said, conclusively prove, though I believe that it does. And although the evidence in support of that conclusion be strong, I admit my inability to afford a demonstration of the correctness of the opinion I entertain, that the scrofulous matter is derived directly from the blood Supposing that opinion to be warranted, it may be asked, whether the materials from which the scrofulous product results, have gone far towards elaboration before they leave the blood-vessels, or whether any elaboration be afterwards effected This is a question upon which we can only speculate; but it is certainly difficult to understand how the necessary abnormal action, that causes the deposit, can be developed in so many regions of the body, and often in so many different tissues almost at the same moment of time, as we find in tuberculous diseases, unless something more than a local action was at work to determine the deposit.
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> "But having come to this point, we must now stop. We cannot prove whether the process under which the deposit occurs be one of secretion or excretion—whether it occurs in virtue of some peculiar action developed in the part, and causing a new combination between the constituents of healthy blood—or whether i is owing to the blood having undergone the change before it has ceased to circulate, becoming overcharged with albumen and salts, and ready, when the ordinary excreting organs do not carry them off, to deposit them anywhere, and wholly independent of local action. However, so much may, I think, be fairly assumed that the blood is changed before the deposit is made, that the accumulation of certain morbid materials in the blood constitutes what is known as the scrofulous diathesis or constitution, and that their deposition in the subcutaneous lymphatic glands constitutes what we know as scrofula."

The question which Mr. P. next examines is the following:—Are pulmonary tubercle, or phthisis and scrofula, in their nature identical? O more properly, are tubercular disease of the lung, and scrofulous disease o the subcutaneous glands, identical in all other respects than in the seat o the deposit? With a view to the solution of this question, the author directs his attention first, to the characters of the product deposited in these two affections, and the condition of the part in which the deposit is made he then proceeds to ascertain whether the circumstances under which the deposit is made are identical; whether it occurs at the same period of life and whether it falls with equal severity on both sexes; whether, when ne of these affections is largely prevalent, the other keeps pace with t; and whether those who die of phthisis bear in their bodies the marks f scrofula; because, he remarks, if in most of these respects a kind of ntagonism between these affections can be demonstrated, a conviction must hen be induced, that how strong soever may be the resemblance in the eneral characters of those diseases, the points of difference are certainly ot unimportant. And even if we should come to the conclusion, that in heir nature these affections are identical, he conceives that it might still be mprudent to lose sight of scrofula, as a term well known, to indicate a articular form of tubercular disease.

Mr. P. admits that he is unable to point out any well-marked distinction etween the tubercular matter deposited in the lungs in cases of phthisis, nd the morbid deposit in scrofulous glands, besides that which is dependent upon the difference of structure of the organ. Notwithstanding Albers nd Sandras have described certain differences between the two, yet, Mr. ulliver, who has examined a large number of specimens, in which deposits existed in the lungs, the liver, the kidney, the spleen, the internal nd external lymphatic ganglia, has discovered no such differences. He ays,

> "In the human subject, it appears to me, that crude tubercular matter, from vhatever organ obtained, differs as little in its microscopical as in its general and hemical characters. Other observers have come to similar conclusions. Mr. Dalrymple thinks that oily globules are more predominant in scrofulous than in uberculous matter, but with that exception, he knows no difference in the microscopical character of the two products. In so far, then," remarks Mr. P., "as concerns the physical and chemical qualities of scrofulous and tuberculous matter, we can, at present, draw no distinct line of difference between these products."

In regard to the difference in the condition of the part in which the deposit is made, Mr. P. is satisfied that the lymphatic glands, before they receive the scrofulous deposit, undergo considerable change—they become enlarged, their vascularity is much increased, and their consistence becomes almost flesh-like—this change he conceives to be the result of inflammation. Now, although the presence of inflammation was thought by the older authors to be necessary for the development of all accidental productions—an idea which was supported by Broussais—few of the more accurate observers of the present day are inclined to doubt that tuberculous matter is usually deposited in the lung unaccompanied by any sign of inflammation or even active hyperæmia. Mr. P. assumes that we have clearly no right to assume the existence of antecedent inflammation, when we find the pulmonary tissue around a tubercle apparently quite healthy. He does not advocate the opinion, that tubercles may not be developed as a consequence of inflammation, when a predisposition exists, or that a period does not arise in the progress of tubercular development, when a certain amount of irritation or inflammation may be set up in the surrounding tissue—but only, that alone, and in the absence of all other causes, inflammatory action does not seem capable of generating tuberculous matter, and that there is no proof that inflammatory action in the lung usually precedes the deposit of such matter.

> "If," he remarks, "the correctness of these views be admitted, it is evident that, in the necessity of a change in the organ in which the deposit is made, in the one case, and in the absence of any similar change, in the other, we have established one important difference between tubercular phthisis and scrofula."

Another supposed difference between the scrofulous matter of the lymphatic glands and tubercles is, that the first is vascular, or at least permeable to injection, while the latter are incapable of being injected. The author, however, has been unable to inject either tuberculous matter in the lungs, or scrofulous matter in a gland. But, he remarks—

"The appearance of the part, upon a simple inspection, may now and then lead to the belief that the injection has succeeded. In a scrofulous gland, the matter may be deposited at several points, and ultimately these points may come so nearly in contact, as to impress a casual observer with an idea, that the glandular structure had been destroyed, or converted into scrofulous matter; and with that impression, if the injection passed into the gland, it might be assumed that scrofulous matter underwent organization—was vascular. But in every case in which I have witnessed this apparent vascularity, I have entirely satisfied myself that the vessels were those of the organ, and not of the morbid product. In the lung, matters appear to me to be in a similar condition. Supposing a portion of lung to be infiltrated, as it were, with tuberculous matter, instead of having it deposited in nodules, injected matter would then seem to pervade the tuberculous matter, because the proper vessels of the organs are intact, and because the fluid has passed through them. But if the tubercle be a nodule developed in an air cell, the tissue of the organ being pushed aside by it, no injection can be passed into the tubercle. The difference, in this respect, would depend upon whethe the tubercle were developed on the mucous surface of the air vesicle, or in the cellular tissue of the organ. Injection, then, does not establish any distinctive character between the matter of scrofula, and that of tubercle."

Mr. P. next considers the difference as to the period when scrofula and phthisis destroy life. He has shown that in the British metropolis, from the reports of 1840—in the twenty-four districts of England an Wales, selected by the registrar-general, in Birmingham, Liverpool an Manchester, and in Ireland during ten years ending 1841,—the majority o the deaths from consumption occurred in individuals over fifteen years while a majority of the deaths from scrofula occurred in individuals unde that age, as will be seen by the following statement.

Metropolis,	total deaths from	consumption	21,667,	of which	21	per cent.	were under 15.
24 Districts,	"	"	8,550,	"	29	"	"
Birmingham, Liverpool, Manchester,	"	"	3,188,	"	39	"	"
Ireland,	"	"	135,590,	"	7·9	"	"

Metropolis,	total deaths from scrofula,	347,	of which	60	per cent.	were under 15.
24 Districts,	"	106,	"	63	"	"
Birmingham, Liverpool, Manchester,	"	23,	"	69	"	"
Ireland,	"	3,149,	"	43	"	"

"The researches made by order of the Count Chabrol, show that in Paris th greatest number of deaths from consumption happen between 20 and 30; the comes the period between 30 and 40; then 40 and 50; then 50 and 60; then to 10.

"It will be seen that the proportion of deaths from both consumption and scroful in Ireland, is under that of England and Wales. In the Irish returns, howeve a very large number of deaths under 15 are ascribed to marasmus, 68,650 bein more than half the total deaths from consumption. Some of these cases were n doubt consumption, some scrofula, and some tabes mesenterica.

"The proof, then," says Mr. P., "seems to me ample, that the period of lif when the deaths from phthisis are most numerous is not that when the ravage of scrofula are most keenly felt, and this constitutes another distinction betwee these diseases. I know that it is said that the registered deaths from scrofula ar no proof of the extent to which it prevails, but such reasoning would also appl to phthisis. Complete evidence they may not furnish,—but as approximativ evidence they are unexceptionable."

The statements adduced by the author show unquestionably the comparative number of deaths caused by consumption and scrofula in individuals under 15 years of age; they afford no evidence, however, of the comparative frequency with which tuberculous matter is deposited in the lungs before and after the age of 15. Tubercles of the lungs are met with in a very large number of children whose death has resulted from other diseases.

Mr. P. conceives that if there be, as is maintained, identity between scrofula and phthisis, they should surely fall with equal severity upon both sexes, and yet, as he has shown from official reports, that in England, Wales, and Ireland, phthisis carries to the grave an excess of females, while scrofula is more exclusively fatal to the male population. This argument does not strike us as very forcible,—inflammatory and other diseases, the pathological identity of which is very generally acknowledged, it is well known affect particular organs more frequently in the one sex than the other, at one period of life than another, and in certain climates or localities than in others,—may not the same be true of scrofulous disease also?

Mr. P. believes that, if the circumstances under which the two affections, scrofula and consumption, are developed, be similar, then where the tuberculous disease of the lung is frequent, scrofulous disease should also be frequent, whereas he shows from the registrar-general's tables for England and Wales,—taking district by district, and comparing town population with that of the country,—from the army returns for India,—from the statements of Sirs A. Crichton and George Lefevre,—from the report of M. Jolly to the French government,—the observations of MM. Rufz, Lombard, Papavoine, Cless of Stuttgard, Lewis, and finally, from his own personal observations, that wherever there is a large mortality from consumption, there is a small mortality from scrofula, and *vice versa*, and that, secondly, in the cases of those who die of tubercular phthisis, numerous as they are, the proportion those who exhibit any marks of having suffered from scrofula bear to the total deaths from phthisis, is very small.

> "Such results," the author remarks, "must certainly leave doubts on the mind as to the identity of those conditions of the system which determine phthisis and scrofula. We see in those cases where the tuberculization of the system is most complete, that not only is the lung studded with those deposits, but that in six-sevenths of the cases the other thoracic and abdominal organs present them, while in not more than one-twelfth of the cases, and in my own experience the proportion is very much smaller, could a similar condition be detected in the subcutaneous lymphatic ganglia. Surely if scrofula be so rife, and if phthisis be the culminating point, the maximum of development of scrofula,—if, in other words, the reason why the apparent mortality from scrofula is comparatively so small be, that he who suffers from scrofula dies from phthisis, surely the phthisical patient should, more frequently than is found to be the case, carry with him to the grave scars or scrofulous glands,—the marks of having suffered from the former disease."

Mr. P. examines next the differences deduced from comparative pathology. Upon this point his facts are scanty. His general conclusion is, that whatever tendency some of the lower animals in the domesticated state have to become phthisical, they do not become scrofulous. By the facts he has thus adduced in relation to scrofula and consumption, he apprehends that it has been very clearly shown, that

> "With the exception of the deposit itself, which, whether found in the lungs, or in a cervical gland, whether examined by the naked eye, by the microscope, or by chemical analysis, is very similar, the circumstances attendant upon the

development of scrofula and phthisis are widely different. In scrofula the gland undergoes considerable change, inflammatory in its nature, before the matter is deposited in it; in the lung we commonly find the tissue around a recent simple tubercular deposit unchanged by inflammation. We find, further, that in districts where the causes of phthisis act with most intensity, those of scrofula fall lightest, that the age when the ravages of scrofula are most keenly felt is precisely that when the visitation of phthisis is least to be apprehended; that the sex which suffers most severely from one of those diseases is least affected by the other. And beyond all this, there is the fact, that among the numerous victims of phthisis, at least 18 out of every 20 exhibit no marks of having suffered from scrofula. It seems to me, therefore, that these facts constitute so clearly marked a difference between the two affections that it will be most convenient, most conducive to scientific correctness to consider them as affections possessing a certain similarity of character, but no identity. It may be that they belong to the same family; so do pleurisy and pneumonia,—but every one deems it desirable to make as clear a demarkation as possible between those diseases. I say the same of tubercular disease generally and scrofula, between which the points of resemblance are strong in so far as concerns the deposit, but in all else they are weak."

The next point to which the author directs his attention is to determine the prevalence of scrofula in Great Britain. The inquiry has been conducted evidently with great industry and ability, and with the utmost caution. Mr. P. has examined himself, or by the aid of others, a large number of children and adults in schools, union houses, factories, and elsewhere; he has availed himself of a large number of hospital and dispensary returns; he has procured from the Army Medical Board returns of the prevalence of marks of scrofula among recruits; and like returns respecting the inmates of prisons; and he has taken the reports of the registrar-general as evidence of the destructive effects of the disease.

Though derived from so many and such different sources, there is a striking concurrence in the results of the evidence thus collected, whic agreement constitutes, in Mr. P.'s estimation, a strong reason for believin that his data do very nearly represent the actual prevalence of the disease

"We see that the returns of cases of scrofula found among our ordinary population, are singularly confirmed, not only by the returns of hospitals and dispensaries, but also by the examination of recruits and convicts, and I think we are thu justified in regarding as near the truth our estimate of the prevalence of scrofula such as we have defined the disease. That is to say, that scars are apparent i about 1½ per cent.; that the subcutaneous glands are enlarged so as to be perceptible on simple inspection in less than 3 per cent.; and that the glands may b detected by the finger in 24½ per cent. of those of the children of the poor wh are under 16, and in 8 per cent. of those above,—or taking the whole population in 10 per cent.; and that something less than 3 per cent. of the people are unde treatment for the disease in its various forms."

The above presents a result very different from what we have been le to suspect by English medical writers.

"The registered mortality from scrofula contained in the report of the registra general, amounts to 8 per 100,000 on the gross population of England and Wales that is to say, the average annual deaths from scrofula are about 1200, and th population, in round numbers, about 16,000,000."

Scrofula has been found to prevail very unequally in different district in some extending to 72 per cent., in others not exceeding 11 per cen In some parts of England the proportion is under 1 per cent. In th eastern agricultural districts the deaths from scrofula amount to 11.8 pe cent, while in the south-western they are as 10 to every 100,000 popul tion, being a difference of nearly 20 per cent. In the purely manufacturin districts of Lancashire and Cheshire the proportion is only as 5·6, while in Yorkshire it is as 3·5 per 100,000. The recruiting returns for the United Kingdom show an average rejection of 8 per 1000 for marks of scrofula. In England the smallest number of rejections for scrofula occurred in London, namely 5 per 1000; in Scotland, in the Edinburgh district, 16 per 1000; in Ireland, in the Dublin district, 13 per 1000.

A series of facts are presented to exhibit the prevalence of scrofula in other countries than England,—we can spare room only for the following general statements.

Orphan Asylum, Lisbon.—Dr. Rosas—800 children examined—35 per cent. bore the ordinary marks of scrofula,—of the boys 50 per cent., of the girls 10 per cent.

Orphan Asylum, Amsterdam.—495 examined—42 per cent. bore marks of scrofula.

Imperial Royal Orphan Asylum, Vienna.—308 boys, 104 girls = 412 examined, of whom 18 boys, 27 girls = 45, or 11 per cent. came under treatment for scrofula.

Frederick Orphan Asylum, Berlin.—230 boys, 123 girls = 353—of whom 129 boys, 56 girls = 135, or 53 per cent., were scrofulous.

St. Petersburg.—840 children examined, of whom 41 per cent. bore evident marks of scrofula.

Imperial Foundling Hospital, Morocco.—15,515 examined, of whom 9 per cent. were affected with scrofula.

Boston House of Industry.—98 boys, 48 girls = 146 examined, of whom 70 per cent. bore the specified marks of scrofula.

Philadelphia Public Schools.—2641 boys, 1357 girls = 3,998—examined by Dr. S. Jackson—of whom 10 boys, 3 girls = 13 are returned as scrofulous.

New York, whole number of deaths from scrofula, at the average of 35 years, was 4278, or 1 to every 1241 of the population.

Philadelphia, the proportion is 1 to 453,—in *London* 1 to 17,500.

Beyrout, *Cairo*, *Alexandria* and *Greece.*—607 examined, of whom 21 presented the ordinary marks of scrofula.

India.—100 creole children, born in India, were examined,—80 dark complexion, of whom a majority were subject to glandular disease; 18 flaxen hair and olive eyes, all affected with glandular tumours; 2 very fair, with gray eyes, both scrofulous. 75 of mixed parentage, examined by Dr. Spry, had all swelled cervical glands; 4 scrofulous ulcers; 136 of pure English parentage, of whom none were scrofulous; 504 native children, of whom 300 were scrofulous.

Children's Clinique at *Strasburg.*—Of 300 treated, 40 had scrofulous diseases.

Madeira.—405 children examined, 15 per cent. were affected with scrofula.

In *Paris* the deaths from scrofula amount to 1 in every 3,221 of the population; in *Geneva* to 1 in every 2790.

In *France* 2 per cent. of the rejections among the recruits were for scrofula.

The question which next comes under consideration is, whether the occurrence of scrofula is proportionably more frequent than formerly? in other words, is it on the increase in England? From the data presented by Mr. P., "which, though not strictly accurate, are the best we possess, and which, when used with caution, constitute a fair body of evidence on the point, the conclusion," he remarks, "seems a fair one, that scrofula is much less prevalent in the present day than it was in the seventeenth and eighteenth centuries."

The several particulars in relation to scrofula which we have thus far noticed occupy the first eight chapters of Mr. Phillips' treatise. With the ninth chapter he commences the inquiry into the causes of scrofula; passing in review,—hereditary influence,—predisposition from parents,—contagion,—food,—atmospheric influences,—climate,—temperature, and occupation. Each of which alleged causes of the disease is examined thoroughly and carefully. The conclusions at which the author arrives are based upon a very extensive series of observations,—and his remarks throughout are of the greatest importance. The value of the statistical information, and the interesting character of the facts and observations on the causes of scrofula contained in these and the ensuing chapters, would prompt us to make frequent and extensive extracts from them,—which is, in fact, the only method by which we could present to our readers any fair idea of the extent and importance of the author's researches on the several points involved in the discussion, but the length to which we have already extended this review warns us of the necessity of condensing as much as possible our further remarks upon the work.

The interesting question of the hereditary character of scrofula is very fully and ably investigated. Mr. P. examined himself, or caused to be examined, in the metropolitan, factory, and in rural districts, 2023 families, each consisting of from 3 to 5 children, and living, as nearly as may be, under similar circumstances; the entire number of the children was 7,587; and of these 1738, or nearly 23 per cent. bore the marks of scrofula already indicated. In 506 instances, derived from many localities and under the most varied circumstances, both parents were apparently *untainted*, and their offspring amounted to 2021. Of these 421, or something less than 21 per cent. presented marks of scrofula. In 276 instances there was reason to think that both parents laboured under scrofulous taint, their offspring amounted to 1092; of these 271, or nearly 25 per cent., bore the ordinary marks of scrofula. In 589 instances the father carried about him marks of having suffered from scrofula, whilst the mother was free from them, their children amounted to 2107, those having marks of scrofula to 483, or nearly 23 per cent. In 652 instances the mother bore upon her person the marks of scrofula, whilst the father did not; their children amounted to 2367, and of these 563, or nearly 24 per cent. presented marks of scrofula.

> "In glancing over these results," the author remarks, "it must be kept in min that the offspring of the tainted, on the one hand, and of the untainted on the other are not intended to represent their relative fecundity, for means were taken t collect only such families as were represented by not less than three, nor mor than five children. It will be observed, that although an hereditary influenc must be admitted to be present and is apparent in each class, yet at its maximu the influence does not appear to be quite 4 per cent. It would seem that th influence of a scrofulous mother upon the offspring is greater than that of scrofulous father."
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> "This result," Dr. P. adds, "is in opposition to two parties, one maintainin that the disease is always hereditary, and never acquired; the other, that no diseases are hereditary, but that they are always the result of circumstances whic came into action after birth."

It has been suggested that although the *disease* itself was not hereditary yet a *predisposition* to it was acquired from parents. Mr. P., however concludes that, in the present state of our knowledge, it is impossible t say in what consists the predisposition to scrofula, or to indicate the characteristic changes which show the actual existence of the disease. The predisposition to scrofula conveys to his mind a condition of the economy which has no external, distinct, and constant signs; although he would by no means say that its existence is not real, or that direct observation may not hereafter make it known.

The question whether the existence of any other disease in the parent is capable of developing scrofula in the offspring is next cautiously and minutely examined. The result of the facts the author has collected is, that a feeble constitution is a favourable, though not a necessary or indispensable condition for the development of the tubercular cachexia; that a feeble constitution is more likely to be the offspring of diseased than of healthy parents, but that we are not in a condition to point out the causes in the parent which tend most to entail feebleness upon the child, nor what kind of disease or feebleness in the parent tends most to induce the development of scrofula in the child.

By many it is supposed that the premature or advanced age of the parents, or of either of them, may influence the development of scrofula in the child. Mr. P. presumes that children born of parents advanced in life, as well as those born of youthful parents, may present less of vigour than the offspring of persons in the prime of health and strength, but it is not proved that they usually become scrofulous. Children of old men are often, though not always, weakly, and he admits that a weakly child placed under unfavourable circumstances is more liable to suffer from scrofula than a strong one, but simply because he is weakly.

Frequent intermarriages have been supposed to favour the production of scrofula. Mr. P.'s impression is, that intermarriages among *healthy* persons tend to no such calamity; he is not prepared, however, to deny that other physical or mental influences may not result from such unions.

The author believes that there is no proof in support of the opinion that the disease may be acquired by suckling a scrofulous nurse, neither, he admits, is it easy to procure proof that it could not happen, since such proof could only be negative; "meanwhile," he adds, "as all our present evidence is negative, we are justified in saying that such communication is, in the present state of our knowledge, inadmissible."

He conceives that whatever plausibility there may be in the reasons urged for the communicability of scrofula by mediate or immediate contact, or by inoculation, we have no satisfactory proof of the reality of such transmission. But, although he sees no danger of propagating scrofula by the association, or even the sleeping in the same bed with a scrofulous child, he should always object to the cohabitating of a sickly child with one in good health.

After a short but interesting reference to the general mortality, with a view of determining the accuracy of a strong conviction entertained by him, that many of the causes which tend to destroy life, do, when acting with less energy, tend to develop scrofula, and that when they are intense enough to determine a large general mortality they leave a scanty harvest for the slower moving ravages of scrofula; the author proceeds next to inquire into the influence of food in the production of the latter disease. The facts adduced in illustration of this question are copious and interesting; they are arranged and compared with great care, but would scarcely admit of any very satisfactory condensation. We must content ourselves with presenting the general conclusion drawn from them by Mr. P., which is:

"That whether children are brought up in town or country, whether their accommodations as to space be ample or confined, whether born of healthy or unhealthy parents, the influence of food in the production of scrofula is most important, and that the extent to which it prevails has a very evident relation to the diet of the child."

"That those who live almost exclusively on vegetable food in this country are less robust and exhibit a greater tendency to scrofula than those who subsist on an admixture of animal and vegetable food, is, I think, true. Our own rural population, as well as that of Scotland and Ireland, bear out the assertion. But, although it has been shown that insufficient and improper food, however associated, may lay a foundation for that disease, we have, in truth, no conclusive proof that any particular article of food directly tends to the production of scrofula."

In regard to the influence of a contaminated atmosphere in the development of scrofula, the following is the result of the author's very extended researches.

"If we regard scrofula in the widest signification of the term, so as to include all diseases in which a tubercle-like deposit seems to determine the loss of life: namely, phthisis, scrofula, and tabes mesenterica, the result may be thus stated. The mortality from those diseases is larger in towns than in country districts; but it is not found that the densest portion of a town is that in which the mortality is the largest. Thus in the four districts in London in which the crowding is the greatest, the average deaths from these affections is under 0·46, whilst in four other districts, in which there is less crowding, the average deaths amount to 0·51, and in Bethnal Green they are under 0·40. If we now narrow the question to the influence of a residence in towns and bad air in developing scrofula alone, the result may be thus stated. In the four years' mortality included in the fifth report of the registrar-general, namely, from 1838 to 1841, in a district comprising towns having a population of 3,759,186, the deaths from scrofula, in those four years, amounted to 758; and in a district having a rural population of 3,440,501 souls, the deaths amounted to 1,333; or to state the question more simply, the proportion of deaths from scrofula to 1,000,000 living was, in the town districts, 50 per annum, and in the country districts 97. And if with scrofula, tabes mesenterica be included, the numbers would stand as 122 deaths in towns, to 160 deaths in the country. Again, let us observe the south-eastern, the south-midland, and the south-western districts; there the mortality from scrofula amounted to 1 in 12,000; whilst in the densely packed factory districts of Yorkshire, Lancashire, and Cheshire, the mortality from scrofula will be seen to be less than half the preceding mortality from the same cause, namely, about 1 in 25,000.

"And supposing we go one step further, and compare one portion of the metropolis with another, we find that the total deaths from scrofula in the metropolis, when compared with the population, are as 5·6 to 100,000 living; whilst in the most densely crowded districts of that same metropolis, comprising the east and west London, Union, Strand, Holborn, St. Giles, Whitechapel and Bethnal Green, the proportion is as 5·1 to 100,000,—Bethnal Green being represented by 4·8, and Whitechapel by 4·7 to 100,000 living. So in the low, dense and poor districts of Bethnal Green, Poplar, Stepney, Whitechapel, Shoreditch, Westminster, Bermondsey, Rotherhithe, Lambeth, with a total mortality amounting to 21,522, the deaths from scrofula are 45, or 1 in 478; while in the district embracing Kensington, St. George's, Hanover Square, and St. Marylebone, with a total mortality amounting to 14,734, the deaths from scrofula are 30, or 1 in 490. Thus the difference in these districts is scarcely appreciable; but if we compare the western districts of the metropolis with those of Bethnal Green, Shoreditch, and Whitechapel, we find that the proportion of deaths from scrofula to the general mortality, in the former, is as 1 to 490, and in the latter as 1 to 1000. Again, if from considering the influence of localities, we turn to the comparative mortality of the sexes, it will be found that 20 per cent. more boys died of scrofula than girls, and yet it must be admitted that girls are more exposed than boys to the effects, whatever they may be, of crowded rooms and exclusion from out-door employments."

The author considers next the influence of climate in the production of crofula. While he admits that there can be no doubt that the disease pre-ails more in one climate than another, he maintains that the fact of this eing due to any particular quality of the atmosphere of that climate is nproved.

It is hardly possible to determine, Mr. P. remarks, whether the want f light alone would have any influence in developing scrofula, because vant of light almost always implies the influence of much more important gencies of disease. In northern Europe the influence of darkness is xperienced by the whole population, for considerable periods of the year, nd if this were an efficient cause of scrofula the disease ought to be more han ordinarily prevalent in these countries; but this was not observed to be the case by the scientific commissioners of the Northern Expedition, sent ut by the French government,—and in Iceland it would seem that the disease is less prevalent than in countries exempt from that influence.

In regard to the influence of a damp atmosphere in the production of scrofula, the statistical information collected by the author may be thus summed up:—

In England and Wales the proportion of deaths from scrofula to the population is as				1 to 13,400
In dry countries generally	"	"	"	1 to 10,500
In damp countries	"	"	"	1 to 10,300
In seaside towns	"	"	"	1 to 12,500
In inland towns	"	"	"	1 to 13,250

In London the deaths from scrofula along the banks of the Thames are to the total deaths as 1 to 365, and in situations remote from the river as 1 to 762.

"Supposing," Mr. P. remarks, "no other cause capable of developing scrofula to exist in the districts to which we have referred, and supposing the larger proportional mortality from the disease to be as constant in the more humid districts as in those to which we have alluded, the presumption arises that humidity exercises a small, though a certain influence in producing the disease. And whatever the evidence is worth, it tends to that result, though I by no means consider the data we possess on the subject conclusive. It has been usual to point to Holland and England as cold and damp countries, in which scrofula is more usually prevalent; and the prevalence being assumed, a cause was also assumed, and that cause was humidity. But, although we may admit that these countries are comparatively cold and damp, we deny the unusual prevalence of scrofula, at least in England, because it is now demonstrated, that in no European country do the people suffer less from scrofula than in England."

The facts collected by Mr. P. in relation to the influence of temperature, are particularly interesting; they show, so far as they go, that neither a cold, nor warm, nor equitable, nor variable climate has any appreciable influence, of itself, in the production of scrofula, and that a person predisposed to scrofula will enjoy no protection from the disease by a removal to a country colder, or even warmer, than his own. Dr. P., however, admits that, in European countries at least, scrofulous diseases are evolved or aggravated during the cold of winter.

The influence of occupation in the production of scrofula is examined with all the care its importance demands; and the extensive series of facts collected by the author upon this point are well worth a close examination, —we can afford room only for the following general results as to the influence of labour in the cotton and woolen factories.

In England and Wales, the deaths from scrofula, as compared with the total population, are as 7·6 to 100,000. In rural districts 9. In town districts 5. In factory towns with a population of 2,043,038, the proportion is 4. In non-factory towns, with a population of 2,870,416, the proportion is 5 to every 100,000. In the linen and cotton districts, having a population of nearly 1,000,000, the gross mortality is 2,786; that from consumption .477, or 1 in 209; that from scrofula .004, or 1 in 24,872. In the woolen districts, comprising a population of nearly 750,000, the gross mortality is 2,242; that from consumption .396, or 1 in 252: that from scrofula .005, or 1 in 17,877.

The evidence he has collected upon the question of the influence of factory labour upon human life, has produced in the mind of the author a strong conviction that occupation in factories, though in many respects less to be desired than occupation in the open air, is yet accompanied by so many counteracting circumstances that the evils which may be inseparable from that occupation are mitigated, if not counteracted by the increased means of procuring the necessaries of life which it affords. The evils of factory towns do not consist in factory employment, but in the agencies which are commonly found in action in such towns.

Some observations follow, drawn, however, from imperfect data, in reference to the influence of close confinement and imprisonment in the production of scrofula.

To exhibit a fair exposition of the author's views of the efficient cause of the disease, we present the following extract from the summary appended to this portion of the treatise. The importance of the remarks contained in it will sufficiently excuse its length.

> "The general mortality and the deaths from particular diseases bear a close relation to the poverty of the population, and to the vicissitudes, or alternations of prosperity or adversity to which they may be exposed; whilst wealth and stations, which ensure to the more elevated classes of the community abundant food, ample clothing, convenient and well-ventilated dwellings, and pure air, are nevertheless unfavourable to longevity; and the industrious labourer, whose toil ensures steady remuneration, and whose temperate habits and provident character ensure him the necessaries of life, good of their kind, and ample in quantity, is in the condition the most favourable to long life and uninterrupted health.
>
> "In the last result, then, it is to diseased nutrition, however brought about, that we refer the production of scrofula; an opinion in which there may be no novelty, inasmuch as many authors have assigned to perverted nutrition a powerful agency in developing the disease, especially Carmichael, in England, and Lepelletres and Baudelocque, in France, yet my controversy with Baudelocque consists in a denial of the exclusive agency which he assigns to impure air in deranging nutrition:—and my object has not been to advance a novel theory, but to obtain, and group, and classify a collection of observed facts, so numerous as to enable us to distinguish between essential and secondary or accidental causes, and to ascertain (if such an estimate should be found to be practicable) the separate or relative value of numerous agencies in developing scrofula.
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> "Diseased nutrition is, then, I conceive, the cause of that condition of the system, which we term scrofulous; but diseased nutrition originates, it will be said, in various agencies, either acting separately or associated together. Thus the inheritor of a feeble frame may owe to that circumstance an impaired digestion, in spite of the solicitude, and it may have been great, with which he has been reared, and of the prudence with which his food may have been adapted to his condition: or his occupation may have been so long continued, or of such a character, or impure air may have been so constantly respired as in either case to derange the digestive functions; or, if no one of these agencies shall in itself have been sufficiently active to induce the disease, they may have been associated together, and when thus associated may so impair otherwise the functions of nutrition as to induce scrofula, even when the food has been abundant in quantity and judicious in kind. But the cause of diseased nutrition, at that period of life when the seeds of scrofula are sown, is, in the vast majority of cases, insufficient food, or improper feeding, and even if the less direct agencies, which we have been considering, occasioned scrofula much more frequently than we believe they do,

he distinction is of great practical importance, viz., that they do not act in virtue of a specific influence suited of itself to produce scrofula, but as general morbific agencies which impair digestion, and thus indirectly contribute to the production of the disease.

"That food, insufficient in quantity or innutritious in quality, stands in the relation of cause to the development of scrofula more directly than any other morbific agent is shown by the circumstance that wherever food is abundant in quantity, and of a sufficient generous character, scrofula is kept under, that is to say, it is less frequently seen, although other noxious agents are, perhaps, rife, and the general mortality is great, and that in our rural districts, where the air is probably pure and the occupation healthy, and where the general mortality is small, scrofula is largely developed, because the food, even when abundant, does not contain sufficient stimulus to preserve the frame in healthy vigour. Yet, although we may have no satisfactory proof that a contaminated atmosphere, or any one of the other indirect agencies to which we have referred, will operate so injuriously on the digestive functions as of itself to induce scrofula, I do not the less deplore the influence of those debilitating agencies, which impair the healthy activity and lessen the proper vigour of large numbers of our countrymen.

"That the advantages to the health of the community which have been held forth as the result of improved drainage and ventilation, have been very mischievously exaggerated, I believe, but it is not the less true that impure air and stagnant filth are noxious agencies, and that the dwellers in our crowded thoroughfares will be benefited by their removal."

"Great alternations of prosperity and adversity, sudden and extreme vicissitudes, large earnings to-day succeeded by half or no work to-morrow, uncertainty of occupation, irregular habits, prosperity inducing intemperance and creating factitious wants, whilst unaccompanied by those habits of providence which would prepare for the evil day, not far off;—all these, and many other such influences, operate with far more intensity on the manufacturing labourers than the atmosphere they breathe, or the courts and alleys they inhabit;—and according to the intensity of those influences they increase the general mortality instead of developing the slower and chronic derangement, which assumes the form of scrofula, and which is rarely induced by active agencies, but is manifested when the whole economy has been gradually and slowly contaminated.

"The frequency of scrofula amongst the classes of society who live in wealth or comfort, has been supposed to militate against any view of the disease, which assigned to insufficient food or improper feeding a large share in the production of the disease. But diseased nutrition may co-exist with sufficiency of food, and even with seemingly judicious feeding, and is, perhaps, as frequently found in the pampered child of luxury as in the cottage of the peasant."

The tenth chapter comprises the author's views of the treatment of scrofula. He first enters upon a consideration of those hygienic precautions which may often retard, and in some cases altogether prevent, the manifestations of the disease. His directions under this head are particularly judicious,—though they present nothing of a novel character.

After an interesting sketch of the various superstitious practices that have been adopted for the cure of scrofula, including a very interesting history of the "royal touch," the author enters upon a consideration of each of the more prominent remedies whose virtues have been particularly vaunted, by some even esteemed as almost certain specifics for the disease.

Mercury he denies to be an agent capable, alone and under ordinary circumstances, of removing scrofula; but as a purgative or alterative he believes that it will be found useful in many cases. When profuse purgation or salivation is induced by it he considers it always injurious.

"I believe," he remarks, "that the form of mercury which answers best in the treatment of scrofula is the Bichloride,—and I am fully convinced that in very minute doses, a twentieth of a grain, twice a day, for instance, combined with the syrup of sarsaparilla, it does not yield in efficacy to iodine, baryta, or other medicines, which at present enjoy a more extensive reputation."

The specific power of iodine in the removal of scrofula, Dr. P. denies, and, although he believes that it is not ordinarily strong enough to make head against the disease in an unfavourable season of the year, yet he thinks he has known some cases in which decided benefit has seemed to result from its use, even when the season and other circumstances have not been favourable, and when no change in those circumstances has occurred beyond the exhibition of iodine: even in these cases, however, he would refer the benefit to a general alterative action upon the economy, and not to any specific action,—the general health has improved under the employment of the remedy, and the local disease has abated. Such cases, he adds, have however formed but a small minority of those in which he has administered the iodine.

The curative power of barium, in scrofula, Mr. P. considers as little, if at all, inferior to those of iodine. Its field of usefulness is, however, more limited,—of iodine we have the choice of many different combinations; barium yields but one. The barium seems to him to be a more certain stimulant, or he might even say irritant, than iodine, and consequently its use is clearly contra-indicated where there is much free inflammatory excitability of the system, but in cases marked by a tallow-like complexion, pale tongue, languid circulation, and irritability of the mucous surfaces, its virtues will be often very remarkably exhibited. He usually gives it in solution, one grain to an ounce of distilled water, with ten drops of compound tincture of gentian. Of this solution he commences with half an ounce, twice a-day; on no occasion has he exceeded three grains in the day, and he has never experienced any check in the administration of the medicine. Of its external employment he thinks less favourably.

The solution of caustic potash, he is satisfied, has, in many instances, exercised a salutary influence, and these were mostly cases in which much acidity pervaded the secretions, and acted upon the general economy.

Burnt sponge he considers to be perfectly inert,—he never saw it produce the slightest good effect.

There is scarcely any form of scrofula he has not seen to improve under the use of cod-liver oil, but he seldom was able to carry it far enough to produce any considerable amelioration; he considers that its good effects result from its improving digestion and nutrition.

In the internal use of sea-water, and the curative effects of sea-bathing, Mr. P. has little or no confidence. He believes the apparent good derived from them is to be attributed to the visit to the sea-shore at a favourable season of the year, and the tonic influence of the pure fresh air, change of scene, and bathing. His mind is strongly impressed with the conviction that the benefits derived from sea-bathing are not greater than might be obtained from a change to a pure air and the use of the simple cold bath in an inland situation. In the use of the cold bath the temperature of the water, and time of immersion should be so graduated as to be followed by decided reaction, but it must be borne in mind that in scrofulous patients the desired reaction is less certain than in healthy persons, and if this be not certainly obtained the bathing should be discontinued.

That the use of mineral water exercises any direct curative influence over scrofula, Mr. P. considers no proof has been adduced.

Our author is convinced that the season of the year is, beyond every other agent, except food, the one whose influence is greatest in the excitement or cure of scrofula. He has satisfied himself that scrofulous sores are most numerous and aggravated in spring and the beginning of summer, that they are least frequent and most ameliorated at the commencement or the middle of autumn; and that at the one period they have been aggravated by the cold of winter, at the other they have been ameliorated by the warmth of summer, and this has happened when all other influences have been apparently unchanged. It must, therefore, be evident, he remarks, how defective the estimate of every plan of treatment is, which does not include the influence of season.

His own plan of treatment is, early in the disease, removal to a warm, dry locality, and, if possible, a change every month or two from one place to another; a properly regulated diet, with a small portion of animal food once or twice a day, according to circumstances; as much active exercise in the open air as can be borne without fatigue; airy sleeping rooms; friction of the surface with warm flannel before dressing in the morning.

In cases where the appetite is bad, and indigestion imperfect, an occasional emetic. If the biliary secretion be imperfect, calomel or gray powder, with rhubarb; if costiveness exist at the same time, warm purgatives; if all the secretions are preternaturally acid, alkalies with bitters. If the digestive organs are deficient in tone, wine, bitter ale, bark, iron, iodine, barium, or mercury, assisted or not by alkalies, may be required. The choice of the particular agent is a matter for the discretion of the medical adviser in the particular case; what is best in one instance will not be so in another.

"In a case where the general health has not greatly suffered, mercury, iodine, or barium, as alteratives, may do well,—in a case where the pale surface, the flabby textures, the languid circulation are prominent signs, some tonic, such as iron or bark, will be more clearly indicated; in some instances the cod-liver oil will exercise a favourable influence on nutrition. To do more with respect to the selection of a particular medical agent than afford these general indications is hardly desirable."

When the gland has suppurated, unless ulceration is inevitable, the abscess should not be opened,—but where the rupture of the integuments is clearly threatened, as a large ulcer, and much subsequent deformity may occur from the gradual thinning, preparatory to the fluid making a way for itself, it is best to anticipate that result.

"If this be done at a comparatively early period, the cutting instrument is the appropriate agent for the purpose; if it be done tardily, when the integument is thinned and of a violet colour, the caustic, so applied as to destroy the thinned integuments, will occasion less deformity."

Mr. P. is not disposed to underrate the value of the commoner local agents in the treatment of strumous glands.

"Though such glands are the indication of a general evil, they constitute in themselves a local one also,—and as general remedies are often powerless to arrest the progress of the disease, it is important to ascertain what may be reasonably expected from direct treatment. Upon the constitution itself, it is of course not pretended that we can act by the means I shall now indicate. I think that when the signs of inflammatory action are unequivocally manifested by pain, heat, and redness, such inflammation may frequently be treated with advantage like common phlegmon, by leeching and cold."—"Where the tumour is more chronic, frictions with mercurial or iodine ointment are sometimes found useful."

From the foregoing outline of the leading points embraced in Mr. P.'s treatises, our reader will be able to form an opinion of the general conclusions to which the author has arrived in relation to the nature, causes, prevalence, and treatment of scrofula. Of the character, extent, and value of the facts and observations upon which these conclusions are based, no correct estimate can be formed except by an attentive study of them in the form in which they are presented in the several chapters of the work. They are of a character and magnitude which have precluded any attempt at analysis.

The treatise is unquestionably one of much value and interest, and notwithstanding some errors may, perhaps, be detected in the data presented by the author, and a few inaccuracies in the deductions he has drawn from them, still the work is one which is calculated to correct many of the errors into which the profession have been led, in regard particularly to the etiology of scrofula, while at the same time it presents an admirable specimen of the true manner in which investigations into the causes and prevalence of every other disease should be conducted; though we fear there are few who will be found willing to undergo the labour and are able to devote the time which such an inquiry demands. D. F. C.

BIBLIOGRAPHICAL NOTICES.

Art. XV.—1. *The Diagnosis, Pathology, and Treatment of the Diseases of the Chest.* By W. W. Gerhard, M. D., Lecturer on Clinical Medicine to the University of Pennsylvania, &c. Second edition, revised, and enlarged. 8vo. pp. 288. Philadelphia: Barrington & Haswell, 1846.

2. *The Young Stethoscopist, or the Student's aid to Auscultation.* By Henry J. Bowditch, M. D. 12mo. pp. 278. N. York: J. & H. G. Langley; Boston, William D. Ticknor & Co. 1846.

3. *A Clinical Introduction to the Practice of Auscultation and other modes of Physical Diagnosis, intended to simplify the study of the Diseases of the Lungs and Heart.* By H. M. Hughes, M. D., Fellow of the Royal College of Physicians, &c. 12mo. pp. 270. Philadelphia: Lea & Blanchard, 1846.

4. *Manual of Diagnosis of Diseases of the Heart, preceded by Clinical Researches for the study of these affections.* By Dr. Felix Andry, Ex-chef de clinique, at the Hospital of La Charité. Translated from the French by Samuel Kneeland, Jr., A. M., M.D. 12mo. pp. 168. Boston: W. D. Ticknor & Co. 1846.

If medical students and practitioners are not now well versed in physical diagnosis, it is certainly not because there is any lack of treatises upon the subject: The medical press teems with them of every form and size. Hardly has one been issued, before another calls for notice, claiming to supply the deficiencies or correct the errors of its predecessors. Stokes, and Williams, and Raciborski, and Walshe, and Barth and Roger, have all in turn been commended to students of medicine, and now to swell the throng of candidates for public favour appear three new names, and one, already known and honoured, with fresh claims to our regard. If this multiplication of instructors might be fairly considered an evidence of an increased interest in the subject of physical diagnosis, or as a proof of perfected knowledge amongst the younger members of the profession, it were well, and we should hail it as an omen of scientific advancement. But there is some reason to fear that the case is far otherwise; that while the means of learning the theory of auscultation, &c., are more than ever within reach, the opportunities for applying it to practice are diminished, and those which are still accessible, singularly and systematically neglected. The very best of the treatises mentioned are almost worthless unless expounded by a living teacher, and illustrated at the bed-side. They are worse than worthless; they are pernicious: they lead to positive error. Unless the student be told what are the sounds he hears in auscultation, unless one more experienced than himself inform him of the name of every sound, and present to his ear the sound corresponding to every name; the descriptions and definitions of his "Manual" must continue meaningless to him; or if, by chance or skill, he now and then succeeds in rightly coupling the characters of a rhonchus with its corresponding name, he can never feel assured of the fact until it is corroborated by a living teacher. He is as little qualified to interpret acoustic signs, as one who has learned to read a foreign language by the help of dictionary and grammar, is to translate that language when he hears it spoken. Those who have honestly made the experiment of learning auscultation through books alone, will be the very first to admit the justness of these views. For the beginner, clinical instruction in auscultation is essential. The more he listens, and the less he reads, the surer and more rapid will be his progress. When once his ear is familiarized to the new language, he may study with advantage its theory; indeed he *must* then study it in order to perceive the principle which pervades the phenomena he has witnessed, and to acquire the power of analyzing and interpreting them in whatever new combinations they may occur.

Treatises on auscultation, then, are valuable, not as introductions to the elements of the subject, but as keys for their explanation. Of course their value will depend upon various circumstances; upon their clearness of style and logical arrangement; the accordance of their theory with the facts revealed by observation their greater or less exactness of description; their minuteness and completenes of analysis; their correct measurement of the significance of sounds. both positive and differential, &c. In these respects there is as much difference among them, as among the grammars of a language: some of them are as defective in principle and clumsy in execution, as others are logical and elegant, while in all the essential elements,—those discovered by Laennec,—may perhaps exist in nearly the same degree.

The first of the works named at the head of this notice is not to be classed with the others, except in so far as it comprises an ample discussion of physical diagnosis It is also a complete exposition of the pathology and treatment of thoracic diseases. It not only explains the method and describes its application, but also sets their just value upon the results which it furnishes, by arranging them along with the functional symptoms, and the pathological anatomy of each disease This is the best refutation of the charges which are constantly made against physical exploration in medicine, by those who appear to imagine that science can never advance beyond the point at which they ceased to learn. "Deductions from the whole of the physical signs and functional symptoms constitute the diagnosis, and not the naked examination of a single set of them," says Dr. Gerhard and again, the results of auscultation, &c., are by him "regarded as more useful than any symptoms taken singly, but as neither the only class of symptoms to be relied upon, nor as superseding the general signs." In his opening chapter he insists strenuously upon this proposition, and throughout the whole work he develops and illustrates it. Indeed the clear and complete manner in which this is done, forms the distinctive character of the treatise, and its peculiar merit; a merit which we do not equally recognize in any other English work on diseases of the chest, except that of Dr. Stokes, which, however, is less rich in details than is required by the present state of medical science. The Dublin Professor, and Dr. Gerhard, appear to be agreed that, in the words of the latter, "the same mental discipline, and the same rules of philosophizing are required" in medicine as in other sciences; and, accordingly, the arrangement of their materials by these authors strikes the reader at once as an instance of logical sequence, and an example of sound medical reasoning. They reach the point aimed at by successive and sure steps, but neither fly nor jump to a conclusion. It were devoutly to be wished that medical writers, generally, could be persuaded that something more than an acquaintance with text books, and the art of prescribing, is necessary to fit a man for being an author or a teacher; that there is such a thing as medical philosophy, an art of observing, and reasoning, without which they must labour in vain for their own enlightenment or the instruction of others: that education, and discipline, and industry, which in the simpler days of our forefathers, were supposed to be necessary for a scientific man, are, in truth, quite as needful now, though they have almost ceased to be thought so. If such a persuasion were general, we should not so often have to lament the publication of unreadable essays by men of real but undisciplined ability, and we should have the satisfaction of hailing more frequent and more valuable additions to the permanent medical literature of the country.

While the reasoning of Dr. Gerhard appears to us worthy of all commendation we are compelled to express a less favourable opinion of his style, which too often gives evidence of haste or carelessness. In a second edition this defect is the less excusable, for the labour of a few hours would have sufficed to correct all inaccuracies, and redeem the work from its only conspicuous blemishes.

2. Dr. Bowditch's Manual is of very modest pretensions, addressing itself only to the student, and referring him to more elaborate treatises for the details of physical diagnosis. It is purely elementary, and does not claim to set forth any novelties; but there are an accuracy, a freshness, and a vivacity in its composition, which absolve it from the suspicion of being a mere compilation, and give it the air of a purely original work. The author appears to have the two great requisites for the office of teacher, a thorough understanding of his subject, and much ease in com-

municating his ideas. He has made his little book quite an illustrated edition, by adorning it with correct wood-cuts of all the different forms of stethoscopes, and other instruments employed in auscultation and percussion, and by having the capital letters at the commencement of several chapters formed by these instruments, or by groups of them,—a very ingenious artistic device. The first two-thirds of the work are equally divided between the discussion of diseases of the lungs and heart, and in the remaining third, there are concise accounts of auscultation applied to pregnancy, to diseases of the brain, and to fractures, with a notice of Messrs. Cammann and Clark's method of auscultatory percussion, and a summary of what is known in veterinary auscultation. These subjects are treated at sufficient length to fulfil the author's purpose, and with that precision and facility which all would anticipate who know his untiring industry, his sagacity and honesty as an observer, and the rare opportunities he has enjoyed for exercising and perfecting his skill.

3. The first thing that struck us on opening Dr. Hughes' "Clinical Introduction," was the difference of its style from that of the two works just noticed. It is perfectly free from those colloquial and even trivial phrases with which they are too often defaced, and if it makes no pretension to elegance, it is everywhere at least correct and scholar-like. Why is it that our writers are so negligent of the graces of composition, and that, for the most part, they seem to set at defiance all grammatical rules? Though not a few British physicians are open to a similar charge of negligence, it must be confessed that most of the English medical publications are remarkable for a pure and elevated style rather than the opposite. Without by any means offering Dr. Hughes' style as a model of elegance, it may be described as plain and perspicuous. His sentences have this one great advantage over those of some writers we could name,—they can all be parsed.

The general plan of Dr. Hughes' work is that of MM. Barth and Roger, comprising directions and cautions for the examiner, an explanation of the method, (percussion or auscultation, &c.): a description of the sounds, &c., which it furnishes, and an indication of the diseases in which the several signs occur. In the Preface, the author bestows very warm but merited praise on the "admirable little book of Barth and Roger," but complains that it treats of auscultation alone. Dr. Hughes seems not to have been aware that a second edition of MM. Barth and Roger's work was published in 1843, which includes an essay upon percussion; for had he known it, he would scarcely have ventured the assertion, "that a work was wanted in which should be simply explained to the student, not merely the origin, character, and diagnostic value of certain physical signs, but also the manner in which he should proceed to elicit them; and which should direct him how to percuss, as well as state the indications afforded by percussion." All this, and more, had been done by MM. Barth and Roger, and we are constrained to say, (highly as we esteem Dr. Hughes' essay,) much better done, more fully, more logically, more practically done. Under the circumstances, then, we think that the publication of a new manual was needless. But passing over this question of expediency, and comparing the work with others of English origin, it must be admitted to be the best *elementary* exposition of the signs, and the causes of the signs, of thoracic diseases, and of the mode in which a knowledge of them is to be obtained. Inferior to the treatise of Dr. Walshe as a guide to the diagnosis of diseases, an office which the author expressly disclaims for it, it is superior to that work in plainness of meaning and simplicity of arrangement, and in the avoidance of those nice distinctions and multiplied terms which are perplexing and discouraging to the student, although well appreciated by the experienced observer. For the beginner, especially for one whose opportunities for oral instruction are imperfect, Dr. Hughes' work appears to us peculiarly adapted; it will teach him in the best manner, all of auscultation and percussion that it is possible to learn through such a medium.

4. We have hardly alluded to the portions of the foregoing treatises devoted to diseases of the heart, because we intend to make some remarks applicable to them all while noticing Dr. Andry's Manual. The greater part of it is occupied by the details of twenty-one fatal cases of cardiac disease, including the symp-

toms of each during life, the diagnosis then made, the dissection, and finally, the inferences to be drawn from the whole history. The simplest cases are first considered, to wit, those of hypertrophy alone, and afterwards the more complicated forms of valvular disease. Such of these as we have read, and were able to understand, in their English dress, are interesting, and serve very well to illustrate the principles of cardiac pathology, though not always the principles of Dr. Andry, nor of his teacher and exemplar M. Bouillaud, whose spirit breathes through all the pages of the work. Everywhere uncompromising dogmatism startles the reader from his philosophic hesitation, and the most ingenious sophistry makes facts seem as pliant as if truth were a matter of mere indifference or caprice. The "cases" are preceded by a theory of the sounds of the heart, and followed by the application of this theory to the murmurs and other signs of heart-disease. It is in the main identical with that of Hope, Williams, and others, including the authors of the works just noticed, none of whom, any more than Dr. Andry, seem to be aware that serious objections may be brought against it, or that some portions of it are, perhaps, untenable.

All these writers agree that the impulse of the heart is owing entirely to the systole of its ventricles, and consequently that the first sound, which is synchronous with the impulse, is due to that contraction, or to something that takes place simultaneously with it. It is unnecessary to inquire into the origin of this doctrine on the present occasion; let us briefly examine the objections to its being received. And, first, the shock of the heart against the parietes of the thorax is not confined to its apex; in most thin persons, and in others who have some enlargement of the organ, there is a distinct movement of the parietes of the chest opposite the ventricles, before that of the apex is perceived. Now admitting that during the systole the apex is tilted upwards so as to strike the ribs, how is the previous shock to be explained? Can a hollow muscle increase in bulk while effacing its cavity? Assuredly not. The body of the ventricle, during the systole, must retire from the ribs; it can strike them only during the diastole. This appears to us an inevitable conclusion from the premises, and depends upon established physical laws, but it is also demonstrated by direct experiment. And here we leave out of view all those experiments performed on warm-blooded animals, where the circulation is maintained by artificial respiration. However valuable they may be for localizing the sounds of the heart, they are rendered quite worthless for illustrating the rhythm of its movements, by the state of congestion of all the cardiac cavities. But in vivisections of cold-blooded animals, as of frogs, the slower movements of the heart, and the more natural respiration, permit the action of the organ to be studied. The uniform testimony of competent observers of this point is that during the *diastole* the heart swells up towards the external wound, but that during the systole it buries itself in the thorax. The case of congenital protrusion of the heart reported by Cruveilhier, and quoted by Dr. Carpenter in his Physiology, is to the same purpose; "the diastole of the ventricle had the rapidity and energy of an active movement, triumphing over pressure made upon the organ, so that the hand closed upon it was opened with violence." A similar case, too, reported by Dr. Robinson, of Va., (*Am. Journal*, Feb. 1833,) demonstrates the same activity of the ventricular diastole. Indeed this was the doctrine both of Harvey and Haller. Physiological observation, therefore, would teach us that the impulse of the heart is chiefly due to the ventricular diastole. We now proceed to show that its teaching is confirmed by pathology.

It is curious to observe how blind men are to the most evident facts when once they have pledged themselves in support of a theory. As a matter of course they who believe the impulsion of the heart to depend entirely upon its systole, teach that the impulse is strong in proportion to the development of the ventricle; that hypertrophy of this part is always attended with increased impulse. Dr. Gerhard affirms that "as in hypertrophy, the size is necessarily increased, while the tissue of the heart becomes stronger and firmer, there is necessarily an increase in the power of impulsion." Dr. Bowditch, that "the impulse is synchronous with the contraction of the ventricles," and that "it is most strikingly increased by hypertrophy:"—Dr. Hughes, that "when hypertrophy exists, of the ventricles or of the auricles, but of the left ventricle more especially, the impulse is powerful and heaving;" and finally, Dr. Andry, "if the heart often beats with such force where the ventricular contractions are only momentarily increased, there is still greater reason for its doing so when the increase is permanent and organic, as in hypertrophy." One would suppose that such uniformity of doctrine could only result from great clearness and constancy in the evidence of facts; that it was a legitimate induction from many well-observed cases of hypertrophy. And yet it is no more than a deduction from an imperfect theory; the testimony of observation is directly adverse to its truth. That we may not be accused of packing a jury to try this cause, let us analyze the cases detailed by Dr. Andry, the first that present themselves, and which their reporter hardly imagined could bear witness against his doctrine. We premise that, according to Dr. Andry, the ordinary weight of a healthy adult heart is eight or nine ounces.

Case 1. Impulse not mentioned. Hypertrophy great, confined to left ventricle.

Case 3. Impulse hardly perceptible. Auricles *dilated;* left ventricle one inch thick at base.

Case 4. Impulse not mentioned. Left ventricle hypertrophied; four-fifth inches thick; auricles natural; heart weighs 11 oz.

Case 5. Impulse feeble. Ventricles enormously hypertrophied; auricles *dilated;* weight 25 oz.!

Case 6. Impulse not mentioned. Left ventricle one inch at base; auricles natural; weight 16 oz.

Case 20. Impulse feeble. Left ventricle *only* hypertrophied; auricles not described; weight 15 oz.

Here are six of the cases, the only ones in which the impulse is described either as feeble, or from not being described at all, we must presume to have been at least no greater than natural; yet in every one of them the hypertrophy was considerable, in one excessive, and in all confined to the ventricles. Why was not the impulse strong in these cases? They present all the conditions required by theory for producing this result; but the result is wanting. Do they therefore invalidate the theory? Let the reader judge. But this group of cases has not yet furnished all its evidence. Observe that in the third and fifth cases in which the impulse is noted as feeble, the auricles were found *dilated;* that in the twentieth case, in which also the impulse was feeble, the auricles are not described at all and may therefore be assumed as natural; and that in the fourth and sixth cases, in which the impulse is not mentioned, the auricles are said to be natural. Are this dilatation of the auricles, with a feeble impulse, and this normal condition of the auricles with a natural impulse, mere coincidences? Let us endeavour to find a reply to this question by contrasting with the foregoing cases those in which there was a strong præcordial impulse.

Case 10. Impulse strong. Dilatation and hypertrophy of both *auricles* and ventricles; weight of heart 15 oz.

Case 13. Dull heavy sound of a shock. Hypertrophy of left ventricle and both *auricles;* weight 16 oz.

Case 14. Impulse strong and extensive. Hypertrophy, with dilatation of right ventricle and *auricle;* columnæ of *auricle* double their normal size.

Case 21. Impulse strong. Columnæ of right, and walls of left *auricle* hypertrophied.

Case 18. "Pulse small, disproportioned to the force of the heart's beatings." Ventricles slightly hypertrophied; both *auricles* dilated and much hypertrophied.

These are all the cases, except one, in the series before us in which the impulse is clearly described as vigorous. What element do they present in common with those of the first group? Hypertrophy of the ventricle. Yet in the one group the impulse is strong, in the other feeble or natural. What element belongs to the second different from any existing in the first group? Hypertrophy of the auricle. Does the difference of function then depend upon the difference of lesion? does abnormal impulse proceed from auricular hypertrophy? We do not see how any other than an affirmative answer can be given to this question. If it be first proved that simple ventricular hypertrophy does not coincide with augmented impulse; then that auricular hypertrophy uniformly does; and further, that auricular dilatation is accompanied with a feeble impulse; the conclusion does appear to us inevitable that the impulse of the heart is chiefly due to the contraction of its auricles. Does not, then, pathology confirm the conclusions of physiology upon this subject? We shall present one other pathological consideration before leaving this discussion. It is well known that there is sometimes a want of correspondence between the præcordial and the radial pulses, that, for instance, there may be two or three of the former to one of the latter. Here is a fact which ought to have shaken confidence in the theory of Bouillaud and Hope; for how could the ventricle contract without propelling its contents into the aorta and causing an arterial pulse. To avoid this palpable objection Bouillaud resorts to a supposition which it is almost incredible that so sagacious a physician should for a moment entertain; to wit, that the ventricle being incompletely filled on account of an auriculo-ventricular contraction, *beats almost empty.* But though it contain never so little blood, its contraction will propel that little, and produce an arterial pulse. This is not a case like that of approaching death, when the blood accumulates in the trunk, and the heart is so feeble that the artery at the wrist is empty, although the carotid perhaps throbs in unison with the heart. In the case we are considering there are two or more blows in the præcordium for one pulse in *any* part of the arterial system. No blood whatever leaves the heart at the first impulse. How then can the impulse be owing to contraction of the ventricle? But if the impulse be regarded as dependent upon the diastole, the case is plain. The mitral orifice is contracted, the first systole of the auricle cannot force enough blood through it to excite the ventricle to contraction, but enough only to cause a slight impulse, a second or third systole of the auricle renews the impulse and completes the repletion of the ventricle which then contracts. The fact of distinct murmurs accompanying these supernumerary impulses, when the edges of the mitral orifice are roughened, illustrates and confirms this view.

The foregoing considerations would appear to warrant the conclusion that the impulse of the heart is mainly due to the ventricular diastole which, in its turn depends upon the auricular systole, a conclusion which might have been supported by many other facts than those adduced, and especially by many drawn from the nature and succession of cardiac murmurs. We have not leisure at present to enter upon this interesting discussion, but would refer those of our readers who desire to examine it, to the treatises of Harvey and of Haller, and to the essays of MM. Beau, Fauvel, Guyot, Hardy, and Behier, and especially to the "*Pathologie Générale*" of the latter two gentlemen. Meanwhile we shall state, in a very few words, the theory which appears to us to rest upon true observation. During the long pause the ventricle remains contracted, and the auricle fills up with blood; during the first sound the auricle contracts forcibly, dilating the ventricle and causing part of the impulse, and then *without any intermission* the ventricle contracts, striking its apex against the thorax;—the first sound is caused by the passage of blood through the orifices, by its irruption into the ventricle, by the diastolic and systolic impulses, by the closure of the auriculo-ventricular valve, and by the muscular contraction of the walls of the heart. The second sound is synchronous with, and caused by the flapping of the semilunar valves. We feel assured that any of our readers who are conversant with diseases of the heart will be able to explain, by means of this theory, all accurately observed cases with a much less expenditure of ingenuity than is wasted by Dr. Andry in accommodating his "observations" to the prevalent doctrine, and much less violence to common sense than is done by Dr. Hope in the following passage. The diastolic impulse "is occasioned by the diastole of the ventricles, during which action the heart sinks back from the walls of the chest, and this sinking back terminates in a jog or shock, occasioned by the refilling of the ventricles."

Of the translation of Dr. Andry's Manual we should be glad to speak with approbation, were it possible. If the translator were not well acquainted with the English language there would be less occasion for our complaining of the execution of his work; but more than one paper by the same hand in this Journa attests his competency. We are, therefore, reluctantly compelled to conclude that carelessness, and not want of skill, is to be charged with the Gallicisms whicl disfigure almost every page of the translation, and which none but a person having some knowledge of the French language would be likely to interpret correctly It is a common error to suppose that translating, even from a language one botl reads and speaks fluently, is an easy task. We are persuaded that among trans lators there are very few, even of the most competent of them, who do not com pose with greater ease and purity than they translate. It is an art slowly and laboriously acquired, to transfer the ideas of an author from one to another idiom, so that they shall appear to have been originally written in the latter; and it is one which we earnestly commend to the study of all our translators, present and future, of French medical works. A. S.

ART. XVI.—*Report to the Committee of the City Council appointed to obtain the Census of Boston, for the year* 1845, *embracing collateral facts and statistical researches, illustrating the history and condition of the population, and their means of progress and prosperity.* By LEMUEL SHATTUCK. Boston, 1846.

THIS is a handsome octavo volume, containing 275 pages, with two maps, one exhibiting Boston and its environs on a large scale, the other presenting a sketch of the State of Massachusetts, together with the neighbouring States of Rhode Island, and parts of New Hampshire and New York. Instead of the ordinary meagre decennial census, with a few collateral facts, Mr. Shattuck, the able statistician, whose valuable labours we have so frequently had occasion to notice, presents us in his report with almost every particular which can serve to throw light upon the condition of the population of the flourishing city of Boston. The following topics have received particular attention:

1. Historical notices of the population. 2. Errors of the national census of 1840. 3. Mode of taking the census of 1845. 4. Numbers of the population in 1845, and its past increase. 5. Population of the wards and sections. 6. Places of birth of the population. 7. Classes of the population in regard to colour, sex and age. 8. Dwelling houses of the population. 9. Supply of water. 10. Domestic condition. 11. Education. 12. Legal voters. 13. Occupations. 14. Progressive wealth. 15. Public charities. 16. Pauperism. 17. Crimes. 18. Moral and religious institutions. 19. Births, marriages and deaths. 20. Health. 21. Government. 22. General views and conclusions.

The information upon these several topics, though presented with as much brevity as the occasion admitted of, covers a wide field of investigation. It must all prove more or less interesting at home, whilst much will be acceptable to the distant and general inquirer. The ordinary limits of a bibliographical notice will not, of course, admit of more than a passing glance at some of the contents of Mr. Shattuck's valuable book.

By his enumeration it appears that the population of Boston in 1845, amounts to 114,366. The coloured people comprise only 1,842, or 1.61 per cent., whilst the foreigners and their children amount to no less than 37,289, being 32.61 per cent. of the whole population. The proportion of males to females in the general population is as 100 to 101.03. This very trifling disparity is regarded as a sign of the great prosperity of the place, in consequence of which large numbers of young men are attracted to the city for the purposes of trade or labour.

Births.—Considering how much has been done by Massachusetts in collecting information calculated to show the condition of the people and their resources, it is somewhat surprising that her metropolis should have no regular provision for registering the number of births which annually take place. At several periods imperfect registers have been kept, but as these generally depended upon the record of baptisms, it is evident that they must be partial in a country without a regular church establishment. The plan of keeping a register of the practitioners of midwifery, and making it obligatory on them to report the births coming under their cognizance, sending an officer of the board of health to collect their returns at stated periods, will do all that may be necessary towards obtaining the desired information.

Mr. Shattuck makes the following sensible observations under the head of

Public Health.—"No subject is more intimately connected with the prosperity and happiness of a people, than the degree of public health that they enjoy. Some places and some circumstances are known to be more favourable than others to the development and prolongation of the vital energies of man; and it is a matter of the greatest moment to the whole population collectively, and to each one individually, to know what facts exist in the place selected for a place of residence, which influence its character in this respect. There is a mode by which all this information may be obtained; and by which the force of mortality pressing upon a people may in some degree be weighed and measured. This mode is an accurate enumeration of the number and ages of the living; an accurate registration of the births, and the localities, circumstances, and causes of death; and an intelligible abstract of these facts. This matter may be illustrated by the information we already possess. It appears from accurate investigations now made, that of 100 deaths in two different places, 40 may take place in one and 60 in the other, showing that mortality presses upon the one with fifty per cent. greater force than upon the other. In a subsequent part of this report, it appears that of 16,414 deaths in the ten years, in the period 1831 to 1840, only 6.46 per cent. occurred in June, and 10.74 per cent. in September, showing that mortality pressed upon us with 66.25 per cent. greater force in the latter, than in the former month. It also appears that in the last five years 4,859 persons died under five years of age, showing that mortality pressed upon that tender age equal to 46.62 per cent. of all the deaths. It moreover appears that in the same time 812 deaths were caused by *scarlatina*, showing that that disease, or that form or force of mortality, pressed upon us equal to 7.96 per cent. of all forms or forces. In like manner may this force be weighed and measured in all its details. The accuracy of the measurement depends, however, upon the degree of accuracy by which the facts are registered and abstracted.

"We are aware that objections exist against inquiries of this kind—most people being satisfied with the generally received opinion, that 'no place is more healthy' than the one they live in. We have also been told that this is a subject which might be interesting to a medical man, but not to the people generally! Others have objected to any investigation, which might show one section of the city to be more unhealthy than another, because it would *impair the value of real estate!* It has, however, appeared to us that if facts do exist, which show any section to be unhealthy, they should be made known, that the lives, the health, and the happiness of our fellow-beings may be preserved; and that the suffering, and the public and private burdens which their premature sickness and mortality occasion, may be averted. In proportion as we view *human life*, with all the manifold consequences of its preservation, to be more valuable than the few dollars and cents, more or less, which a landlord may receive from a tenant in an unhealthy locality, in the same proportion should we value the exhibition of facts which have a bearing on this subject. The private, social, or public consequences of sickness and mortality cannot be measured by money. This is a matter of great magnitude, and demands a far more extended examination and discussion than can be given in this report. Compared with it, all other investigations are unimportant. It concerns ourselves, our health, our existence; and the persons, the health and existence of all that great mass of human beings that congregate in this growing prosperous city. But how strongly soever we might be inclined to go into the subject, the object of this report throws around us such restraints, that a few only of the facts, which have been gathered, can now be presented."

The diseases, or causes of death, are given by Mr. Shattuck in two tables, one arranged in alphabetical order, and containing the numbers that died by each disease in each year, since 1811; the other, classified with some modifications according to the arrangement adopted by Mr. Farr, in the Reports of the Registrar General of Births, Deaths, and Marriages in England.

The tabular statements and observations showing the deaths from particular diseases and classes, with the proportions of deaths occurring at specific periods of life, and in the various seasons, afford a highly interesting and valuable portion of the book under notice. No one unacquainted with such investigations can form an adequate idea of the labour and close scrutiny required in obtaining the results which Mr. Shattuck has presented for the convenient inspection of those interested in researches connected with the public health and industrial resources of Boston.

G. E.

Art. XVII.—*Elements of Physiology, including Physiological Anatomy, for the use of the Medical Student.* By William B. Carpenter, M.D., F.R.S. Fullerian Professor of Physiology in the Royal Institute of Great Britain, &c. &c. &c. With one hundred and eighty illustrations. 8vo. pp. 556. Philadelphia, 1846, Lea & Blanchard.

No one need now be deterred from entering upon the study of physiology, in consequence of the want of ample and efficient guides. Notwithstanding the rapid advances which the science has made, and the immense mass of important facts in relation to the organization and vital laws of the animal economy, that have been developed within the few past years, we are already provided with numerous elementary treatises, which present a very full and able exposition of the actual state of physiology—embracing a digest of every important addition made to it up to the present day. Among these the treatise of Dr. Carpenter must be assigned a very high rank. As an outline of the principal and leading facts of physiology—both general and special—it will bear a very advantageous comparison with any of the other works of a similar character with which we are acquainted. While it is sufficiently minute on those points, an accurate acquaintance with which is essential to a correct appreciation of the organization and functions of the living body, its details are nevertheless of that plain and general character so essential to an elementary treatise for the use of the student. The author has evidently aimed at a selection of what is of the most importance to those who are just entering upon the study of physiology, and lies most readily within his comprehension, and has been desirous rather to impress the minds of his readers with a clear notion of what he considers the leading or typical facts of the science, than to load their memories with details.

The leading object of the author, as he remarks in his preface, has been to convey to the student as clear an idea as possible of the principles of physiology, to point out the manner in which these principles should be applied, and to give an outline of the most important facts which indicate the nature of the various changes taking place in the living organism. In following out this intention, he has thought it right to adopt a plan which, so far as he knows, is a novel one:—namely, to commence his exposition of the characters of Organized Structures and of Vital Phenomena by a full account of the Development and Metamorphoses of Cells, and of the purposes which these effect in the living body, either in their original or in their altered condition. He is of opinion that the inferences which may be drawn from the observations on this subject, that have rapidly accumulated during the last few years, are entitled to hold the same rank in Physiological Science as that taken by the doctrine of Mutual Attraction in General Physics, or of Elective Affinity in Chemistry; and that the enunciation and development of these should consequently hold the first place in an Elementary Treatise on Physiology. The third chapter, constituting more than one-fourth of the entire treatise, is therefore devoted to this subject, and it presents certainly a very able digest of all the facts that have been developed in relation to it—well arranged and very clearly detailed.

Although the present work combines, to a certain extent, the scope of Dr. Carpenter's two larger works on physiology, yet it cannot be regarded as a mere abridgment of these—it is composed with but little reference to them, and on a plan which is in many respects different.

We can recommend it to the student as an admirable manual for his use—forming a proper and useful introduction to the study of the more extended works on the same subject, in which the several topics it involves are treated in all their details.

The numerous beautiful and very accurate wood-cuts with which the work abounds, serve to render more clear and definite the descriptions given in the text, and thus to facilitate the acquisition of correct views in relation to many subjects of which without them it would be extremely difficult to convey to the student of physiology any accurate notion. D. F. C.

Art. XVIII.—1. *Report of the Pennsylvania Hospital for the Insane, for the year* 1845. By Thomas S. Kirkbride, M. D., Physician to the Institution: pp. 56.

2. *Third Annual Report of the Managers of the (New York) State Lunatic Asylum, (including the report of the Superintendent,) made to the Legislature January 23d,* 1846: pp. 61.

3. *Report of the Mount Hope Institution for the year* 1845. By William H. Stokes, M. D., Physician. Baltimore, 1846: pp. 42.

4. *Twenty-Eighth Annual Report of the Physician and Superintendent of the M'Lean Asylum for the Insane, to the Trustees of the Massachusetts General Hospital*: pp. 28.

5. *The Thirteenth Report of the Superintendent to the Trustees of the State Lunatic Hospital, Worcester, Mass.* From Dec. 1st, 1844, to Nov. 30th, 1845, inclusive: pp. 106.

6. *Annual Report of the Directors and Physician of the Kentucky Lunatic Asylum to the Legislature, December session,* 1845: pp. 30.

7. *Eighteenth Annual Report of the President and Directors of the Western Asylum, to the Legislature of Virginia; with the Report of the Superintendent and Physician:* for 1845: pp. 32.

8. *Twenty-ninth Annual Report on the state of the Asylum for the relief of persons deprived of the use of their Reason.* Philadelphia, 1846: pp. 36.

1. By this, the Fifth Annual Report, by Dr. Kirkbride, we learn that "at the date of the last report there were 151 patients in the hospital, since which, 177 have been admitted, and 159 have been discharged or died, leaving 169 under care at the close of the year. The highest number in the house at one time was 174; the average number for the whole year has been 162—being more than at any previous period in the history of the institution."

"Of those discharged during the year 1845, were cured 80; much improved, 5; improved, 24; stationary, 30; died 20. Total 159."

Dr. Kirkbride, in common with the superintendents of several other asylums for the insane in this country, complains of the removal of many of his patients before the accomplishment of an adequate trial of curative treatment. No less than eighteen were thus prematurely taken away during the past year. At least ten of these were believed to be curables. This mistaken course, on the part of the friends or guardians of the insane, is not only directly detrimental to the patients, but it constitutes an important obstacle to the scientific investigation of the disease. The actual degree of curability of mental disorder can never be ascertained until all who are afflicted with it shall be subjected to a sufficiently prolonged course of treatment.

Causes of death.—Paralysis, 4; apoplexy, 1; tubercular consumption, 3; epilepsy, 3; acute bronchitis, 1; enteritis, 1; exhaustion of acute mania, 2; gradual wasting of the vital powers, 2; gangrene, 1; suicide, 1; old age, 1.

	Males.	Females.	Total.
Whole No. of patients admitted into the hospital	447	322	769
" " discharged or died	361	239	600
" " remaining	86	83	169
Of the 600 discharged or died, there were *cured*	188	125	313
" " " " " much improved	28	22	50
" " " " " improved	51	28	79
" " " " " stationary	51	37	88
" " there died	43	27	70
Of the whole number, there were single	269	136	405
" " " married	152	139	291
" " " widowed	26	47	73

A uniformity of signification placed upon the terms adopted as heads under which to arrange the patients discharged from our several institutions, is necessary to the accuracy of any general rules which may ultimately be derived from these data. Dr. Kirkbride thus defines the terms employed by him:—

"By '*cured*' is meant that the patient's mind has been restored to what was its natural state before the accession of the disease which brought him to the hospital. Natural eccentricities of character do not constitute insanity, and these, of course, are not expected to be removed by a residence in any institution. By '*much improved*' we mean that the improvement has been very marked, and that the patient is, in reality, very nearly well. In most of these cases it is supposed that a longer residence with us would have enabled us to discharge them cured. Many of them are known to have become quite well after arriving at home. Those '*improved*' have not advanced so far in their convalescence, and although the amendment has been decided, the ultimate result has been more doubtful. The '*stationary*' have not improved, mentally, during their residence in the hospital."

For years it has been regarded in Europe as a demonstrated proposition, that insanity is more frequent in persons between the ages of thirty and forty years than in any other decennial period of life. Dr. Thurnam, in his recent elaborate work upon the Statistics of Insanity, proves the proposition to be false in regard to England, and it has long since been shown to be so in regard to the United States. In both of these countries, mental disease is found to be most frequent in the decade from twenty to thirty years. Taking the returns by the last census of the eastern district of Pennsylvania, and the number of patients admitted into the hospital under his care, as the elements of a calculation, Dr. Kirkbride arrives at the following conclusions as to the prevalence of insanity at the different periods of life:

From	10	to	15	years,	one	case for	9127	persons.
"	10	"	20	"	"	"	2160	"
"	15	"	20	"	"	"	1202	"
"	20	"	30	"	"	"	496	"
"	30	"	40	"	"	"	626	"
"	40	"	50	"	"	"	544	"
"	50	"	60	"	"	"	1068	"
"	60	"	70	"	"	"	2265	"
"	70	"	80	"	"	"	2596	"

A course of lectures has been established in the institution, and has thus far been prosecuted with the most gratifying success. "On two evenings of every week an audience of about one hundred persons, of both sexes, may be seen listening with marked attention and the most perfect propriety to the different subjects which are brought to their notice." These lectures are intended for the benefit of the patients; but Dr. K. proposes to give a course the object of which shall be the improvement of attendants in the peculiar and arduous employment in which they are engaged. In this undertaking, he will undoubtedly receive the cordial approbation of every physician concerned in the management of an asylum—particularly so if, upon the basis of those lectures, there be erected the fabric of a "Manual for the Instruction of Attendants," which can be placed in the hands of all engaged in the business throughout the country. Thus shall Dr. K. become the Plato of the philanthropico-scientific enterprise to which his energies are devoted. And, apropos to this, he may make, if he will,—the board of managers thereunto consenting—as rural and beautiful a place of the farm attached to his institution as were the academic groves of the old philosopher of Athens.

2. The following statistics of the asylum at Utica are given in the report by Dr. Brigham:

	M.	F.	T.	Males.	Females.	Total.
Number of patients at the beginning of the year,				131	129	260
" " admitted during the year,				151	142	293
Whole number in the course of the year,				282	271	553
Discharged recovered,	76	59	135	139	129	268
" improved,	39	39	78			
" unimproved,	14	20	34			
Died,	10	11	21			
Remaining Nov. 30, 1845,				143	142	285

Causes of death.—Consumption 4; marasmus 5; diarrhœa 2; apoplexy 2; inflammation of brain 2; paralysis 2; suicide 1; exhaustion after high excitement 1; bronchitis 1; congestion of brain 1.

Of the 844 cases hitherto received into the asylum, 409 were of persons married, 392 single, and 43—12 men and 31 women—widowed.

The insanity of 313 commenced in the decade between 20 and 30 years; that of 217 between 30 and 40 years.

The asylum has been constantly full the year past, and much of the time crowded, while admission has been refused to a considerable number. Extensive additions to the buildings are in progress, consisting of "two wings running backwards from the centre of the wings of the present building, 240 feet by 38, with verandahs at each end, and a dining-room in the middle. When these are completed, the asylum will accommodate about 600 patients, 400 in separate rooms, and the remainder in 20 large dormitories."

The ornamental as well as the useful arts are flourishing in the domain of Dr. Brigham. "Recently," says he, "we had one of the patients, and a person in our employ, instructed in the art of taking daguerreotype likenesses, and they are now able to take likenesses inferior to none we have seen." "We some time since established what is known as a *whittling shop*, which has been very popular. Some articles carved here are not inferior to the handsomest Swiss specimens, of which, in fact, they are imitations." This plan is a good one, and it is to be hoped that the "shop" will so increase in usefulness and strength as to be able, ere long, to bear a somewhat more dignified name.

"Schools have been continued during the year, with the exception of a long vacation in summer. Our confidence in their utility has been increased by experience and observation. Once a month all the schools assemble in the chapel for a general examination in the various branches taught, and for declamation and the reading of compositions. If we are not greatly deceived, our schools and other mental exercises have been very beneficial to our patients; contributing largely to their contentment and cheerfulness, and giving to them a look of intelligence that they would not have, but for the adoption of the course we have mentioned."

The following remarks upon the importance of a general study of insanity, by physicians, are of sufficient value to justify their transfer to our columns.

"Many physicians in general practice are, we think, too apt to consider insanity a disease with which they have but little or nothing to do. Hence they often neglect to qualify themselves, by study and careful observation, to treat it properly. Their attention is not directed to it, the same as to other diseases, by lectures in medical schools, and they seldom purchase and read the best treatises on the subject. It is very true that, in most cases, when the disease becomes established, it cannot be well treated at home. Patients often become prejudiced against their nearest friends, and will not hearken to their advice or take any medicine. For these reasons, and to remove them from the exciting causes of their disease, as well as to have them treated properly in all respects, it is usually necessary to place them in an asylum.

"Still there are instances, though they are not common, when none of these objections, nor any other, exist to the patient remaining at home, and being treated by his ordinary physician. It is therefore very necessary that physicians in general practice should qualify themselves to prescribe in cases of insanity, as well as in other diseases.

"But, admitting that no such cases occur, it is still important for them to thus prepare themselves, in order to *prevent* insanity, and to arrest it in its incipient stage. We have no hesitation in saying, that if the physicians of the country were fully aware of their duty to the community, in this respect, and would exert themselves to prevent insanity, by timely advice, and to arrest it in its early stage, they would do those predisposed to insanity, and the insane themselves, an amount of good unequaled by that of the asylums of the country. They should understand and be able to recognize its earliest symptoms; for, as has been said, insanity often, and we believe we may say most generally, exists in a slight and scarcely perceptible degree for months before it is generally noticed. They should know how liable many are to this disease, from hereditary predisposition, from previous attacks, long-continued menorrhagia or other diseases, from repelled eruptions and extreme nervous susceptibility, and be able to advise such, and warn them in time of impending danger. How many cases of puerperal insanity, or that insanity that comes on after childbirth, might be prevented by timely precautions!

"Physicians should study the various causes of mental diseases, and learn the danger of over-excitement of the nervous system, especially in early life, by too strong emotions, by prematurely tasking the intellectual powers, by the improper indulgence of the appetites and passions, and by the neglect of moral and religious education; and thus be able to advise parents and others whenever they are pursuing a course likely to lead to this disease.

"In this way, physicians would do great good in individual cases, and also do very much towards arresting those alarming *epidemic delusions* that occasionally prevail through the country; a lamentable instance of which is within the knowledge of all,—known by the name of 'Millerism,' or, the doctrine of the immediate destruction of the world. This has not only sent many to the grave, and rendered a vast number insane, but predisposed, we apprehend, a large number, by the excitement and terror it has produced, to nervous diseases, and to insanity hereafter.

"Physicians are often called upon to give their testimony in relation to the mental condition of individuals, and sometimes in cases where not only property, but *life* is at stake. In such cases, their responsibility is very great, and furnishes strong additional reasons for their applying themselves diligently to the study of mental diseases.

"The treatise of Esquirol on insanity has recently been translated and published in this country, in a cheap form. It is a valuable book, and worthy of a place in the library of every physician. The works of Prichard and Combe, on the same subject, have also been republished here, and are considered standard authorities."

3. During the past year improvements and additional buildings have been made to the Mt. Hope Institution. "Besides changing the entire character and appearance of the building," says Dr. Stokes, "these alterations place us in possession of comfortable accommodations sufficient for at least one hundred and thirty or forty patients."

				Males.	Females.	Total.
Number of patients at the commencement of the year,				15	31	46
" " admitted during the year,				58	42	100
Whole number in the course of the year,				73	73	146
	M.	F.	T.			
Discharged recovered,	44	26	70	51	37	88
" improved,	4	7	11			
" unimproved,	2	3	5			
Died,	1	1	2			

The large proportion of cures is explained by the fact that 39, or almost 50 per cent. of the patients discharged, were cases of mania-à-potu. It is to be regretted that Dr. Stokes has not reported these separately from those of insanity proper.

"A notion prevails very generally," says Dr. S., "that insanity consists exclusively in a disordered condition of the *mind*—that it is dependent on a perverted state of the *immaterial principle* of our nature, and that physical disorder has neither agency in producing, nor direct connection with, the mental derangement."

"This popular belief begets, of necessity, a want of confidence in the efficacy of medical and moral treatment. To this single delusion, we may venture to assert, are mainly attributable the numerous hopeless cases of derangement and dementia to be found in our asylums."

The visiting of the patients, by their friends, is discouraged, as being "generally unattended by any benefit, and, in the great majority of instances, positively injurious."

The following remarks, descriptive of the introduction of a patient into the asylum, are in accordance with the true philosophy of the science of the treatment of the insane. "He is placed, if not too violently excited, in agreeable company, and allowed the fullest freedom of conversation, and the utmost cheerfulness consistent with a proper decorum. All the circumstances connected with his arrival and reception, are so regulated as to impress him favourably with regard to the institution. Even the reception-rooms are so located and arranged as to prevent the possibility of his being exposed to any sight or sound that would be likely to aggravate his distress and render the change insupportable to him. He is confided to a kind, conciliating and sympathizing sister, who, by exhibiting a personal interest in his condition, endeavours to gain his confidence and to reconcile him to his new home. He is encouraged to communicate freely his joys or his sorrows, to prefer unhesitatingly his requests, and to make known whatever interferes with his comfort and happiness. In a word, we endeavour to impress him favourably, from the first hour of his introduction into the house, with regard to his new situation, by divesting it entirely of everything of a repulsive and forbidding character, and by giving to every arrangement the appearance and effect of real home comfort."

4. The report of Dr. Bell, of the M'Lean Asylum, is unusually brief. The statistics for the year are as follows:

	Males.	Females.	Total.
In asylum at commencement of year	75	77	152
Admitted during the year	64	55	119
Whole number	139	132	271
Discharged and died	61	59	120
Remaining at the close of the year	78	73	151
Of the patients discharged, there were cured	39	35	74
" " " " much improved	2	4	6
" " " " improved	4	4	8
" " " " unimproved	7	11	18
" " " died	9	4	13

It appears that the average number of patients during the year has been greater than the apartments would conveniently accommodate.

A considerable portion of the report is devoted to the question of the use of mechanical restraints in the treatment of the insane. Dr. Bell says that during the past year, at the M'Lean Asylum, "a single patient only has been placed under any restraint of this kind, and that to guard against the hazard of self-destruction which the ordinary means of watching by the presence of an attendant were not adequate to prevent. An epileptic young man has, at times, sat in Dr. Rush's *tranquilizing* chair (an arm-chair with a board across the front), to prevent sudden falls."

In regard to the use of restraining measures generally, Dr. B. thinks that the prevailing sentiment in Europe is, "that the dangers of occasional unfortunate results from omitting restraints to the insane hitherto thought to require them, are less, on the whole, than the objections to their use and the hazards of abuse, if employed by delegated authority, as must be the case in the extensive foreign hospitals, if they are used at all."

Having personally inspected many of the institutions abroad, during the past year, the author of this report does not, in the following remarks, write unadvisedly. "It is manifest that if we would hope to keep our institutions up to the recent level of those of England, France and Germany, it must be done by unremitting activity, by never resting satisfied with present attainments, and by keeping the community well advised of the absolute necessity of liberal means to meet this great end. No temporizing policy should conceal from it the fact that hospitals for the insane with insufficient, ultra-economical support, must have a constant tendency to degenerate into insane poor houses."

5. The extensive additions which were in progress at the time of the issuing o the "Twelfth Annual Report of the Massachusetts State Lunatic Hospital," were

ompleted in July last. In November they were already occupied by 130 pa- ents, 70 males and 60 females, and, in his thirteenth report, Dr. Woodward says, hat "at the rate of increase since the new apartments were in readiness, before hey shall have been opened a year, every room will be occupied."

Dr. W. recommends the erection of still another building, detached from the thers, and devoted to the most violent patients. The legislature of the state has ppropriated 12,000 dollars for this purpose.

	Males.	Females.	Total.
Patients in the hospital at commencement of year	128	135	263
" admitted in the course of the year	164	129	293
Whole number	292	264	556
Discharged and died	100	96	196
Remaining at the close of the year	192	168	360
Of the patients discharged, there were cured	64	58	122
" " " " improved	11	14	25
" " " " incurable	10	15	25
" " " died	15	9	24
Whole number of patients since opening of hospital	1190	1116	2306
Of whom have been discharged recovered	501	537	1038
" died	99	76	175

Single, 1194; married, 894; widowers, 68; widows, 150=2306.

Diseases which have proved fatal.—Marasmus, 37; apoplexy and palsy, 20; epilepsy, 17; consumption, 16; disease of the heart, 13; suicide, 11; disease of the brain, 7; typhus fever, 6; hemorrhagia, 5; lung fever, 5; cholera morbus, 4; nflammation of the bowels, 4; dysenteric fever, 4; mortification of the limbs, 3; dropsy, 3; diarrhœa, 3; chronic dysentery, 3; erysipelas, 3; disease of the brain from intemperance, 2; bronchitis, 2; old age, gastric fever, land scurvy, congestive fever, concussion of the brain, disease of the bladder, and fright, 1 each. Total 175.

Dr. W. remarks that "there has been an uncommon number of persons affected with general palsy" under his care during the year. "Five have died with symptoms of apoplexy, and two with epilepsy."

The following quotations are made from that part of the report which is devoted to the causes of insanity:

"Tobacco is a powerful narcotic agent, and its use is very deleterious to the nervous system, producing tremors, vertigo, faintness, palpitation of the heart, and other serious diseases. That tobacco certainly produces insanity I am not able positively to observe; but that it produces a predisposition to it I am fully confident. Its influence upon the brain and nervous system generally, is hardly less obvious than that of alcohol, and, if used excessively, is equally injurious. If a young man uses tobacco while the system is greatly susceptible to its influence, he will not be likely to escape injurious effects that will be developed sooner or later, and both diminish the enjoyments of life and shorten its period."

"The secret vice, though doubtless a frequent cause of insanity, and of other severe and fatal diseases, far more than is generally supposed, is most operative in preventing recovery from insanity arising from this and other causes. It is extensively and alarmingly the result of an active propensity excited by disease and unrestrained by reason, moral influences or self-respect. Many cases of a favourable character progress towards recovery till this practice is commenced; then the patient becomes listless, is inclined to lie down or sit in a bent position, walks moderately, looks feeble and feels weak and miserable. His mind loses its energies, its scope is circumscribed more and more, till this beastly indulgence occupies all his thoughts, and the remnant of all the physical powers are all concentrated to this single effort of gross and debased animal nature. Thus, the groveling sensualist lives often a long life a degraded sufferer, without a manly thought or a moral feeling worthy of his nature or his destiny, and finally leaves the world without the regret of his friends, a useless, burthensome, loathsome object of abhorrence and disgust."

From the valuable remarks upon the course of physical and mental discipline, and the other prophylactic measures which should be pursued with children having a hereditary predisposition to mental alienation, we make the subjoined extract:

"Strong propensities should generally be checked, not encouraged. The student should be taught to be active, and the active be restrained and made to study. If the nervous system is exceedingly susceptible, the muscular and circulating systems should be encouraged to activity, so as to balance this unequal tendency. If the child is disposed to be rough, passionate, and quarrelsome, he should be subjected to gentle influences, mild diet, and female society and instruction. Obedience to well-directed authority is essential to any suitable control and salutary management. Unrestrained passion, ungoverned appetite and unlimited indulgence are probably more frequently the causes of insanity, diseases of the heart and other severe nervous affections, than hereditary predisposition: they establish a predisposition where none existed, and may also prove an exciting cause of disease in the very cases in which they have given the tendency.

"There are many cases of children where the mind is too active for the body; intense application wears upon the physical powers and induces disease. In others, all the energies of the system are devoted to gratify animal wants and the lower propensities. Of all things, precocity should be discouraged; the very indication of it is a proof of incipient disease of the brain, which, if encouraged, will inevitably result in concentrating the elements of death upon the brain or some vital organ. The common impression that the young must be permitted to pursue their own inclinations in the business of life, is not always sound discretion. The character should be moulded by training, and the inclinations be changed when they tend to develop the causes of disease which hereditary propensity or acquired tendency has established.

"When we witness the great number of cases of insanity arising from improper influences, education, habits, unrestrained desires and propensities, we have little cause to seek for natural tendencies, but great reason to lament over evils now established in the character and the life, which an early, correct discipline would have averted."

The systematic, extensive and efficient scheme of moral treatment pursued a the Worcester Hospital, has been so fully illustrated in former notices of reports that nothing further is required at this time. We would barely remark that Dr Woodward is at fault when he asserts that "ten years ago not an institution (fo the insane) in this country had devotional exercises or stated religious service on the Sabbath." At the Bloomingdale Asylum, New York, a chaplain has been constantly employed, and religious services have been regularly performed, on the Sabbath, ever since the year 1832.

Having had charge of the Worcester Hospital ever since it was opened; having, from year to year, suggested improvements and additions, and skillfull directed their execution until that institution is one of the most complete in th world; and having largely contributed to the science of insanity and the art o management of the insane, it appears that Dr. Woodward is about to resign hi laborious and responsible office.

"I am admonished," says he, "by the lapse of thirteen years since I assume the management of this institution, that I should resign the charge into othe hands before age shall compel me to relinquish it, or the time shall arrive whe I may not be able to judge of my own qualifications for the trust. I was here a the opening of the institution, received the first patient, and have since receive more than twenty-three hundred, a greater number than were ever (before) i the care of one man in this country. I am now the senior superintendent, bot by age and duration of office."

In his retirement to private life, where he will enjoy not only the *otium* whic he requires, but most truly an *otium cum dignitate,* he will bear with him the hig respect and the best wishes of a circle of acquaintance in extent but rarel equaled.

6. The appointment of Dr. Allen to the superintendence of the Lunatic Asylum at Lexington, was a most auspicious event for the insane in Kentucky. He will effect a regeneration of the institution which has been but too long delayed. Havng placed his shoulder to the wheel, and turned it as far as individual effort is able, he now calls upon the legislative Hercules for assistance, and that assistance will undoubtedly be extended. Important alterations and additions to the buildings are projected, and when these shall have been completed the asylum will ake a rank, which the want of them alone prevents it from now taking, among he best of the country.

	Males.	Females.	Total.
Patients at the asylum Jany. 1st, 1845	102	82	184
" admitted during the year	73	27	100
Whole number in the course of the year	175	109	284
Discharged and died " "	49	23	72
Remaining Dec. 31st, 1845	126	86	212
Of those discharged there were cured	22	6	28
" " " died	16	7	23

Since the opening of the asylum, in 1824, 1229 patients have been admitted, of whom 846 were males, and 393 females. Of the whole number discharged, 432—328 males and 104 females—were cured, and 439—282 males and 157 females—died. Thus, the deaths exceed the cures. This shows a bad state of things in the history of the asylum; but the picture is rendered still more gloomy, and these statistics are proved to be valueless, in a scientific point of view, by the fact, asserted in a previous report, that many of the cases discharged in former years are *inferred* to have been cured *from the want of any record of their having been discharged otherwise.*

A large part of the report before us is devoted to an exposition of the defects and the necessities of the asylum, and an appeal for aid in removing the former and supplying the latter. Dr. Allen has already introduced among his patients the various means for moral treatment generally adopted in our institutions for the insane.

7. The statistics of the Western Asylum of Virginia, as gleaned from Dr Stribling's report, are as follows:—

	Males.	Females.	Total.
Patients in asylum, Jan. 1st, 1845	97	47	144
" admitted in the course of the year	53	39	92
Whole number " " "	150	86	236
Discharged and died " "	36	19	55
Remaining Dec. 31st, 1845	114	67	181
Of patients discharged, there were cured	15	10	25
" " " died	14	7	21
Whole number admitted since July 1st, 1836	279	137	416
" discharged " "	182	78	260
Of whom were cured " "	100	48	148

Causes of death the past year.—Marasmus 9; epilepsy 5; derangement of digestive organs, supervening upon extreme general debility 4; dropsy 1; scurvy 1; phrenitis 1.

Dr. Stribling gives the following judicious advice to persons who may be about to take a patient to the asylum.

"Under no circumstances resort to deception; its effects upon the best interests of the patient are too often most pernicious, and, in many instances, affords cause for painful regret, both to patients and friends, long after the malady has been removed. Better, far better, use any degree of force which the occasion may require, than by false representations or promises induce the patient to do that which persuasion had failed to accomplish. It rarely happens, when the individual is dealt with frankly, and especially when he perceives a determination to use coercion, that he does not yield; whereas, if he is decoyed from his home by false pretences, and is only undeceived (as is too frequently the case), when he finds himself within the enclosures of an asylum, the recollection that his best friends and nearest relations had dealt treacherously with him, embitters his prejudices against them, and destroys his confidence in his fellow man." Truth, unalloyed truth, every word of it.

During the past year, schools have been organized, and their results upon the patients are thus alluded to. "While some few have manifested a slightly growing interest in their scholastic exercises, the greater number have not seemed to enjoy or be benefited thereby, and thus far we do not feel that encouragement in regard to the experiment which some of our cotemporaries indulge."

A sewing society has been formed in the female department, the pecuniary profits of which are to be devoted to the construction of a chapel. "Many of the patients who could not be induced to use their needle, have engaged with alacrity in this enterprise."

Extensive additions to the buildings have been completed during the past year, and the managers recommend the purchase of another tract of land, to increase the farm.

8. The report of the asylum at Frankford, signed by Drs. Evans and Worthington, contains the following statistics:—

	Males.	Females.	Total.
Patients in asylum at beginning of year	29	29	58
" admitted in course of the year	14	12	26
Whole number " "	43	41	84
Discharged or died " "			34
Remaining at end of year "			50
Of those discharged, there were cured			15
" " " died			6

Causes of death.—Disease of heart 1; remittent fever 1; erysipelas 1; "marasmus and inflammation of bowels" 1; disease of kidneys 1; "inflammation o bowels" 1.

"During the fore part of the summer, there were several cases of severe diarrhœa and inflammation of the bowels, which proved fatal in the two cases mentioned. Later in the season, remittent fever prevailed to some extent amongst th patients and attendants, especially the latter, and, in some cases, in an aggravate form. It caused death in the case of the patient spoken of; the rest recovered. A the present time, there is no physical disorder amongst the inmates of the asylum except that which gives rise to the derangement of their mental faculties."

"The school which was spoken of in the last year's report has been continue since, with the exception of a vacation during the warmest weather of summe There are few who have attended the school for any length of time, who do no show, by their improved deportment. at all times, the benefit they have derived There are three patients particularly, who, a year ago, were almost constantl under much excitement, so as to render them unfit for the society of the mor quiet, who, by being taken to the school, during their more rational intervals, have by little and little, been brought to show an interest in their books, to read them and conduct themselves with propriety, not only while here, but also, generally on other occasions." P. E.

ART. XIX.—*An Inquiry into the Physiological and Medicinal Properties of the Aconitum Napellus; to which are added observations on several other species of Aconitum.* By ALEXANDER FLEMING, M. D., President of the Royal Medical Society of Edinburgh. London, 1845: pp. 160. 8vo.

IN our last number, (p. 455,) so full an abstract of the results of Dr. Fleming's investigations as regards the physiological and therapeutic action of aconite was given, that any further notice of that portion of the work would be superfluous; but as the author differs essentially from most of the standard writers on the materia medica as to the relative powers of the various species of aconitum, it is a matter of some interest to inquire whether the opinion he has formed on this point is founded on just and sufficient data.

Dr. Fleming's experiments were instituted on twelve species and varieties of aconite, procured from the Botanic garden at Edinburgh, and of course in a cultivated state. After noticing that De Candolle had divided the genus into four sections, viz., *anthora*, *lycoctonum*, *cammarum*, and *napellus*, he states, that from carefully conducted trials he found "that the only species of aconitum whose activity is such as to render them eligible for medicinal purposes, are those belonging to the section *napellus*." Now as the *A. anthora*, *A. cammarum*, and *A. napellus*, are considered as officinal in the Paris Codex; the *A. paniculatum* by the Dublin College, the *A. napellus* and *A. paniculatum* in the U. S. Pharmacopœia; whilst the *A. napellus* alone is recognized by the London and Edinburgh Colleges, it is of some moment to ascertain whether this latter plant and its varieties should be employed to the exclusion of all others, or whether they may be indiscriminately employed.

As far as we have been able to investigate the subject, Dr. Fleming is upheld in the decision he has come to, by the analogous experiments of Geiger (*Handbuch. de Pharm.*), who states that the *A. neomontanum*, when cultivated, is comparatively inert, and also that the *A. napellus* is possessed of more active qualities, under all circumstances, than any of the other European species. It would appear, however, that Geiger, like Dr. Fleming, experimented with cultivated plants, which may have caused the variance of their results from those of other observers, as it is a well-known fact that cultivation has the effect, in most cases, of diminishing or destroying the active properties of vegetables; though it must be admitted that as regards the *A. napellus* such is not wholly the fact, and since it might be assumed that it was equally inoperative on the other species experimented upon by Fleming and Geiger.

On the other hand it is stated by Hoffman, Prevot, and others, that the *A. anthora* is as active as the *A. napellus*, and it is shown by Haller and Busch that the *A. cammarum* is in like manner to be used with much caution; the *A. paniculatum* forms part of the section *cammarum*, and is possessed of similar qualities, according to most writers, but was found by Drs. Fleming and Christison to be wholly inert.

There is but one way in which these discrepancies of opinion can be accounted for—that of the effect of cultivation, for although Geiger states that the *A. napellus* is not rendered milder by domestication, Ray, and others, observe that it loses much of its activity when transplanted into a garden; now as this species is the only one that flourishes in a wild state in England or Scotland, it is probable that it was less affected than those of foreign origin, growing with it in the Edinburgh botanic garden. This question is, therefore, by no means settled by Dr. Fleming's investigations, nor can it be, until a chemical examination of the various species in a natural or wild state is properly made, and the proportional quantity of aconitina contained in each is ascertained. As the matter now stands it would be better to recognize the *A. napellus* alone as officinal, for at present various species are indiscriminately collected and kept in the shops, and hence the value of each parcel can only be ascertained by the degree in which it possesses the sensible properties of the plant as noticed by Störck.

We cannot conclude these few observations without expressing the high opinion we entertain of the judicious manner in which the author has conducted his investigations, and has detailed the results; thus rendering his essay a most important contribution to our knowledge of medical agents, and forming an excellent model for future writers on the materia medica. R. E. G.

Art. XX.—*Fevers; their Diagnosis, Pathology, and Treatment. Prepared and edited, with large additions, from the Essays on Fever in Tweedie's Library of Practical Medicine.* By Meredith Clymer, M. D., &c. &c. 8vo: pp. 604. Philadelphia, 1846. Lea & Blanchard.

The present volume is made up of the Essays on Fever which appeared in Tweedie's Library of Practical Medicine, with copious additions, in the text, and an entire chapter on typhoid fever, by the American editor. Thus composed, the work presents a very full and fair exposition of the received doctrines concerning the pathology and treatment of fevers. We should, it is true, have preferred an original treatise on this important class of diseases, but in the absence of this, we are willing to receive as a substitute, and it must be confessed a very able one, the volume before us.

The essays composing the body of the work have been for some time before the profession,—and a decidedly favourable opinion of their merit, has been very unanimously expressed;—it will, therefore, be unnecessary for us at this time to enter into a critical examination of them. They are all unquestionably, very able productions. The delineations they present of the several forms of fever, as well as the exposition given in them of their etiology, are, in general, full and accurate, while the pathological and therapeutical views inculcated, if not always incontrovertible, are at least such as have received the sanction of the greater proportion of the more authoritative writers of the present day.

The most exceptionable essay contained in the volume is that, perhaps, of Dr. Shapter on yellow fever. It cannot, with strict propriety, be said to give either a clear or accurate description of that all-important disease; we certainly do not recognize in it a correct portraiture of the fever as it has heretofore appeared epidemically, or still continues to occur as an endemic, in different portions of the United States. We very much doubt, indeed, whether any one would be able to identify the disease, should he happen to meet with a case, from a recollection of the confused description given of it in the essay referred to. The brief delineations added to the essay by Dr. Clymer, from one or two American physicians, are far more faithful to truth, and convey a much better picture of the disease as i ordinarily presents itself, than the more elaborate account given in the essay o Dr. Shapter,—which has failed to afford any very accurate or useful delineation of the usual characters and course of yellow fever, as it presents itself to the American physician, evidently from the want of a familiarity with the leadin characteristics of that form of disease to which the term yellow fever shoul invariably be restricted.

We regret that Dr. Clymer has not added a chapter on this disease, drawn from the ample material furnished in the recorded observations of the practitioners o our own country.

The additions that have been made to the several essays by Dr. Clymer are appropriate and judicious, and, while they form a very considerable proportion augment materially the value of the work, by supplying the more important o these observations and facts,—doctrinal as well as practical—in reference to the leading forms of fever, that have been developed since the essays contained i the volume before us first appeared.

The chapter on typhoid fever by Dr. Clymer presents a condensed but very abl and accurate delineation of the semeiology, pathological characters and usua course of this very important disease.

To the library of both student and practitioner the work will, upon the whole be found a valuable addition. D. F. C.

Art. XXI.—*The Practice of Surgery.* By James Miller, F. R. S. E., F. R. C. S. E., Author of "The Principles of Surgery," &c. &c. 8vo: pp. 496. Philadelphia, 1846. Lea & Blanchard.

Mr. Miller is the author of a work on the "Principles of Surgery," which has been lately published, and his present volume on "The Practice,"—which is intended as a companion to that work,—in which those principles are applied to the treatment of disease and injury, renders the two volumes a complete text-book of Surgery.

Though less attractive than either of the other late works on practical surgery which have been put forward by his countrymen, Fergusson and Liston, it nevertheless will be found to contain a large amount of well-arranged matter, and to be well calculated to assist the student.

We rejoice very much to find Mr. Miller, at the outset of his book, calling attention to the serious error so often committed by students, of imagining that operations constitute the greatest and most important part of practical surgery. "The student is very apt to be led away by the more garnish and imposing parts of his profession, to the neglect of that which is in truth by much the more valuable; and he may also forget that, in after life, he will be only occasionally called upon to perform the greater operations, while daily he must exert his general knowledge and skill, as well as his minor handicraft, to avert the necessity for use of the knife, and other maiming weapons. In the case of a diseased joint, for example, placed under his care, he is not at once to feel the edge of his knife, and contemplate amputation or resection. Such procedure is the ultimatum, not the initiative of his art. Local depletion, rest of the part, counter irritation duly timed and conducted, pressure, splints, attention to the general health, these—to some, apparently a simpler, but in truth a far higher adaptation of knowledge—conspire, and often with success, not to mutilate the frame and endanger life, but to save both life and limb, at but little cost of either pain or danger. Again, in the torturing complaint of stone in the bladder, it is doubtless a great matter to be able by a speedy operation—severe and perilous to life though it be—to free the patient from his misery. And the accomplished surgeon must be at all times competent to undertake fearlessly this hazardous procedure. But it is surely a higher exercise of a better skill, and both the means and the result will prove infinitely more creditable and satisfactory, if, by the internal use of simple remedies, and suitable attention to hygiene, the disease shall be in its very origin frustrated, pain and danger dispelled, and health and comfort restored—all without the infliction of a scratch, or the loss of one drop of blood. In the case of injury, too, the paramount importance of general treatment will be found equally to obtain. The surgeon is ready, at a moment's warning, to amputate skillfully a crushed limb, which has obviously no chance of retaining its vitality, and which, if not speedily removed, must inevitably peril the whole frame's existence; and when, by such severe operations, he succeeds in averting the greater calamity, he has most just ground for self-gratulation, and may truly say that a good thing has been done by his art for suffering humanity. But when, in the case of an injury a shade less severe, there is a doubt whether or not the limb may be enabled to resist the threatened gangrene, when he hesitates not to give to his patient the benefit of that doubt: when, by great patience, care and skill, he arranges the mangled fragments in their proper place, retains them so by suitable apparatus, affording due support, and yet permitting no undue pressure, regulating the play of the general circulation, controlling the efforts of the *vis vitæ*—in short, averting both local and general disaster, and bringing the healthful action of reparation to complete, though it may be slowly, its valued process of cure; and when ultimately a thorough and permanent success crowns such patient and anxious labours:—surely the cause for self-gratulation is increased a hundred fold; the surgeon may well say that a far better thing has been done by his art: and the discerning public will not fail to award to him a higher and a truer meed of praise.

"The advance of surgery will ever be found characterized by a corresponding decrease in its operations, both in amount and in severity. The true object of our mission is not to cut, but to cure."

If the occupants of professional chairs generally were to make the effort, much might be done to check this great and increasing evil, though this we cannot look for so long as the number and variety of operations performed at the miscalled "Cliniques" of our schools are set out in taking array in their annual prospectuses, or urged as inducements to bring students to their halls. G. W. N.

Art. XXII.—*Elements of Surgery.* By Robert Liston, Surgeon to the North London Hospital, Professor of Clinical Surgery, &c. &c. &c. Fourth American, from the last London edition, with copious notes and additions, by Samuel D. Gross, M. D., Prof. of Surgery in the Medical Institute of Louisville, Surgeon to the Louisville Marine Hospital, &c. &c. Illustrated with numerous engravings. Philadelphia. Ed. Barrington and Geo. D. Haswell. 1846: 8vo. pp. 664.

Lectures on the Operations of Surgery, and on Diseases and Accidents requiring Operations. By Robert Liston, Esq., F. R. S. Senior Surgeon to the University College Hospital, and Professor of Surgery in the College. With numerous additions by Thomas D. Mutter, M. D., Professor of Surgery in Jefferson Medical College, Philadelphia; Fellow of the Royal Medical and Chirurgical Society of London; Foreign Honorary and Corresponding Member of the Provincial Medical Association of Great Britain; Corresponding Member of the National Institute at Washington; Fellow of the College of Physicians, Philadelphia; Member of the Academy of Natural Sciences, Philadelphia; Corresponding Member of the New York Medical Society; Honorary Member of the Medical Societies of Philadelphia, of Virginia, &c. &c. &c. Philadelphia. Lea & Blanchard, 1846. 8vo. pp. 565.

Mr. Liston is well known as a bold and skilful operator, and as being independent in his opinions and fearless in the expression of them. His writings have a freshness and vigour, and are so copiously illustrated by his own achievements in operative surgery, that they are well calculated to interest and captivate the surgical student.

His Elements of Surgery have been for some time before the public, and the fact of their having gone through two editions in England, and four in this country, sufficiently attests the favour they have met with. The additions to this work by Dr. Gross are numerous and interesting, and increase its usefulness and completeness.

Mr. Liston's Lectures on the Operations of Surgery are now first published in a volume, and will be unquestionably as popular as his other works. It is very copiously illustrated with wood cuts, and the editor, Dr. Mütter, has made very large additions, the matter he has introduced nearly equaling, indeed, in extent, the author's.

We cannot allow so suitable an opportunity to pass without raising our voice against the too frequent recourse to the knife which characterizes much of the surgery of the day, an evil which we fear the example of Mr. Liston is calculated to encourage, and which, we regret to have to add, the precepts of his editor, Dr. Mutter, are in no degree calculated to restrain.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Life: Capacity of Organizing.*—Whatever doubt might still remain in the minds of some, whether Mr. Hunter maintained the truth in his doctrine that the blood could be organized, that is, that the whole substance of a portion of blood, being at rest either within or without a vessel, may develop itself into tissue and become vascular, and grow and nourish itself, must be satisfied by the observations of Dr. Zwicky* on the metamorphoses of the thrombus, or clot of blood which forms in a vessel above a part at which it is tied. For observations which, like these, stand on the boundary between physiology and pathology, no more space can be given than to state briefly the result; which is, that, to all microscopic appearance, the organization of the fibrin in an inflammatory condition, and of that in a clot of blood is in all essential respects the same process, the presence of the blood-corpuscles in the latter having no farther influence on the process than that of somewhat retarding it. The whole process of the metamorphosis of the fibrin of the blood into fibro-cellular tissue, and of the formation of vessels in it is satisfactorily traced; and thus the only additional evidence which was needed, is supplied for the establishment of another of the long-doubted Hunterian doctrines.—*Paget's Report* in *Brit. and For. Med. Rev.*, April 1846.

2. *Anatomy of the Middle Thyroid and Crico-Thyroid Arteries.* (*Oesterreich. Medic. Jahrbucher*, Mai u Juni, 1845.)—Dr. Gruber in an excellent essay on the anatomy of the parts concerned in laryngotomy and tracheotomy, has treated especially of the middle thyroid (A. thyroidea ima. seu Neubaueri) and the crico-thyroid arteries. The former occurs in about ten per cent. of the bodies examined, arising in general from the innominata, more rarely from the arch of the aorta or the common carotid, more rarely still from the inferior thyroid or thyroid axis, and most rarely from the internal mammary. It probably never arises from the left carotid; when it appears to do so the artery thus arising should be called a second inferior thyroid. Its diameter varies from half a line to two lines and a half; in two cases with healthy thyroid glands, its trunk measured five lines. It is more frequently on the right than on the left side; and once only in ten cases was double. It may proceed vertically up the front of the trachea to the isthmus or either lobe of the thyroid gland, or it may pass obliquely across to the trachea, even going from its right side to the left lobe of the gland.

In regard to the crico-thyroid artery, Dr. Gruber notices especially that arrangement in which it is very large on one side, having a diameter of from three-quarters of a line to two lines. This is most often observed when there is a middle lobe to the thyroid gland, but the large artery is not always on the same side as the middle lobe. Such an artery occurs about once in every four persons, and is more frequent on the right than on the left side. Its place may be taken by the thyroid branch of the right superior thyroid artery. The large artery in most cases bends down at a right angle in front of the crico-thyroid membrane, to reach the isthmus of the thyroid gland, and gives off at its bend a small branch which crosses the membrane. More rarely the trunk of the artery crosses the crico-thyroid membrane and reaches the opposite side. It gives branches to the larynx through the crico-thyroid membrane, to the middle lobe of the thyroid gland, to the lobe of its own side, and when it crosses over, to that of the other side also, and very often to the isthmus of the gland.—*Ibid.*

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* Die Metamorphose des Thrombus; von Dr. H. Zwicky. Zurich, 1845. 4to.

3. *New Muscle of the Posterior Nares and Palate.* (*Muller's Archiv.*, 1846, Heft 5, p. 452.)—Dr. Tourtual has detected a new muscle of the posterior nares and palate, and found it regularly in six men as well as in dogs, cats and sheep. It lies between the mucous membrane and the internal pterygoid plate, before the Eustachian tube, and behind the inferior meatus of the nose. Its upper edge or origin extends from below the palatine process of the turbinated bone backwards and upwards, towards the upper margin of the Eustachian tube; in this line the muscle arises from the vertical plate of the palate bone, and from the internal pterygoid plate of the sphenoid, reaching sometimes to the cartilage of the Eustachian tube; hence its fibres straight descend, and are augmented by others arising from the several parts near which they pass; and going just behind the hard palate, they enter the anterior and outer part of the soft palate, in which they expand on an aponeurosis, mingling with that of the circumflexus palati. The posterior margin of the muscle is usually confused with the anterior fibres of the levator palati, and is covered by a short fold of mucous membrane, which forms the anterior margin of the orifice of the Eustachian tube.

The discoverer proposes for this muscle the name of pterygo-palatine, or levator palati mollis anterior seu minor.* It receives a (probably sensitive) filament from the internal palatine branch of the fifth; and has, probably, also motor fibres from the glosso-pharyngeal. The function of the pair of muscles is probably that of elevating and of slightly stretching transversely the *anterior* and lateral parts of the soft palate, for which the larger and posterior levatores palati do not provide. In this tension of the palate they probably prevent the anterior fibres of the circumflexi from drawing the anterior part of the palate backwards. They probably are important in sounding the palatine consonants, and their posterior portions may assist the greater levatores palati in narrowing the Eustachian orifices.—*Ibid.*

4. *Structure of the Lungs.*—Some interesting points in the anatomy of the lungs are determined by the investigations of Mr. Rainey.† The air-passages he divides into the bronchial tubes and the intercellular passages continued from them, taking for the line of demarkation between them the parts at which the mucous membrane and ciliary epithelium of the bronchi terminate. These terminate abruptly in bronchi of from $\frac{1}{50}$ to $\frac{1}{30}$ of an inch in diameter: the mucous membrane retaining to this boundary its longitudinally and circularly fibrous character, and its pale colour. Beyond the boundary, the tubular form of the air-passages continued from the bronchi is for some distance retained, but it is more and more lost as the passages branch and approach the surface of a lobule, and as the number of air-cells which open into them continually increases. Thus, at last, each minute division of the air-passages becomes quite irregular in its form, air-cells opening into every part of it and almost constituting its walls, till itself ends, without dilatation, in an air-cell. Beyond the boundary at which the bronchial mucous membrane abruptly terminates the walls of the air passages are formed only by a membrane similar to that which walls in the air-cells; and they have no epithelium. Those air-cells are smallest and most vascular which are situated nearest to the centre of the lung; their size increases and their vascularity diminishes at

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* This name had better be used; for the former has been already applied to what is probably a part of this muscle, arising from the hamular process of the pterygoid plate, and mingled with fibres of the pterygo-pharyngeus. See Haller, Elem. Physiol., t. vi. p. 80, note *t*.

† Medico-Chirurgical Transactions, vol. xxviii. p. 581, 1845.

the parts nearer the circumference—in adaptation, probably, to the larger and more ready supply of fresh air to the former parts. Those cells which open directly into the bronchial tubes and intercellular passages open into them by large circular apertures; they are themselves similarly opened into by other cells, which again are similarly opened into by others; forming thus, for each opening into a tube or passage, a series of communicating cells; each series reaching usually from the passage to the surface of the lobule. The cells which are placed in the angles of the branching of an intercellular passage probably open into both the branches, as well as into one another. The walls of the air-cells, on which the capillaries are placed, are formed by thin and transparent but fibrous membrane, which in the formation of the successive communicating cells is folded, or as if constricted, so as to form a definite sharp-edged circular opening of communication between each two, and between the first of the series and the passage into which it opens. In the reptiles the corresponding folds bordering the sacculi of their lungs inclose each a double or folded layer of capillary plexus; in the mammal's lung each such fold incloses a single layer of capillaries, so that both sides of all these capillaries are exposed to the air in the adjacent cells. And this plan of arrangement and structure of the air-cells exists in the mature mammalian fœtus just as it does in after life.—*Ibid.*

5. *On the Supra-renal, Thymus and Thyroid Bodies.*—In a paper on this subject communicated by John Goodsir, Esq., to the Royal Society, Jan. 22, 1846, the author enters on the development of the theory he advanced two years ago, with regard to the origin and nature of the supra-renal, thymus and thyroid bodies, and the correctness of which, with certain modifications, he has been enabled to confirm by subsequent observation and reflection. His hypothesis was, that the three organs in question, are the remains of the *blasto-derma;* the thyroid being the development of a portion of the original cellular substance of the germinal membrane grouped around the two branches of the omphalo-mesenteric vein; the supra-renal capsules, the developments of other portions grouped around the omphalo-mesenteric arteries; and the thymus, the development of the intermediate portion of the membrane arranged along the sides of the embryonic visceral cavity. He has since ascertained, however, that the thyroid body derives its origin in a portion of the included *membrana intermedia* remaining in connection with anastomosing vessels between the first and second aortic arches, or carotid and subclavian vessels. He considers these organs as essentially similar in their structure, as well as in their origin, in continuous portions of the blasto-derma situated along each side of the spine, and extending from the Wolfian bodies to the base of the cranium: the development of the supra-renal capsules having relation to the omphalo-mesenteric vessels the thymus, to the jugular and cardinal veins and ductus Cuvieri; and the thyroid gland, to the anastomosing branches of the first and second aortic arches. The functions of these organs he regards as being analogous to those of the blasto-derma; with this difference, however, that as the blasto-derma not only elaborates nourishment for the embryo, but absorbs it also from without, that is, from the yolk,—the developed organs only elaborate the matter which has already been absorbed from other parts, and is now circulating in the vessels of the more perfect individual.—*Proceedings of the Royal Society.*

6. *Preservation of Specimens of Morbid Anatomy.* (*Med Times,* March 21, 1846.) —A very interesting communication on this subject was made to the Parisian Medical Society, March 11th last, by M. Pigné, Curator of the Dupuytren Museum.

The subject, M. P. remarked, may be divided into two parts—the first referring more specially to the preparation, the second to the preservation of morbid specimens. One of the most important points of the former is the injection of coloured fluids into the vessels of the specimen it is desirable to preserve. The colouring matter should be very soluble, or at least very divisible. Lampblack, acetate of copper, carbonate of lead, and bisulphuret of mercury, are the substances M. Pigné employs for the productions of black, green, white, or red colours: for blue, Prussian blue and indigo are equally eligible, and chromate of lead should be used for yellow. Hématine (extracted from the hématoxylum Cambog), is considered by the essayist a remarkably valuable substance, inasmuch as it will according to the proportion in which it is added to the vehicle (from one to seven per cent.), yield hues varying from the lightest shade of purple to the deepest black. As a vehicle, M. Pigné recommends, for common injections, mutton-suet with the addition of a trifling proportion of yellow wax and essential oil of turpentine. But when it is an object to make an injection into very minute vessels, the essential oil must be used pure, and injected cold. This substance becomes saponified in the capillaries, and acquires a stone-like hardness, which insures to the specimen an almost everlasting duration. M. Pigné cannot insist sufficiently on the necessity of injecting the liquid slowly, no less than four hours being necessary to inject a liver, and two hours and a half for a lung; if the fluid were pressed in with greater speed, laceration of the fine texture of the small vessels would inevitably occur. Gelatine and water in equal volumes form also an excellent solvent for the colouring matter of an injection. The gelatine must, of course, be melted in a water bath, at 97—104° Fahr., and the injection should be made under water into the heated preparation; when injected with gelatine the specimen should be dried, as all the fluids in which specimens are usually preserved are solvents of gelatine. But when the preparation is to be subsequently kept in spirit, instead of gelatine, the following composition should be used:—Suet, twenty parts; white wax, one or two; resin, Venice turpentine, five to seven. The mixture is to be melted in a water bath, and injected under water, after the addition of the colouring matter. When the part has been injected, it is often necessary to dissect it very carefully, and in order to prevent alteration of the preparation, M. Pigné advises to keep it in fluid, composed of water one quart, and creosote twelve drops. This fluid will preserve it unimpaired for six weeks, or two months at the least, without change of shape or colour. For the preservation of the fully prepared specimens, many fluids have been recommended, and during a period of five years, M. Pigné has successively tried no less than 200. 1. Alcohol is the substance most generally employed, and it should weigh from eighteen to twenty-two by Gay-Lussac's areometer. Notwithstanding its reputation, alcohol is open to several great objections; it discolours the specimen, and alters its size and shape by dissolving its greasy elements, a portion of which floats in the liquid, and renders it opaque and putrid, thus necessitating its renewal at considerable expense every two years at furthest. 2. M. Gannal's fluid (alum, and probably corrosive sublimate, are its constituents), blunts the instruments of dissection, and changes the colour of the preparation. 3. M. Sucquet's fluids (chloride of zinc and sulphate of soda,) excellent for the purposes of dissection, cannot be used for the preservation of specimens, the colour of which they destroy, and artificial colouring never giving a satisfactory idea of the natural state of things. 4. Creosote, mixed with water in all proportions, has been tried by M. Pigné, whose attention was first directed to the subject by reading in M. Gannal's preface that creosote hastened decomposition. In M. Pigné's opinion it is the very best of all preserving fluids. Water saturated with creosote, and filtered, retains about twelve drops to a quart, and preserves indefinitely the natural shape, size, and colour of the specimens, although it does not answer so well as an injection. The preservation of the *liquid products of disease* is a subject to which M. Pigné has given much attention, as he deems it of immense importance. Four ounces of pus, extracted by Professor Roux from an abscess, in the year 1843, and preserved by the addition of *one drop* of creosote, were exhibited to the meeting, and not only the fluid was not in the least degree decomposed, but M. Pigné asserted that the globules still preserved, under the microscope, their natural characters. Scrofulous pus, now preserved two years, was shown to the meeting, and certainly presented no sign of putridity. Also urine collected three years and a half ago, and preserved by one drop of pure creosote. 5. Some morbid alterations, such as pulmonary caverns, and scrofulous tumours in various organs, are constantly destroyed by immersion in alcohol. M. Pigné has discovered that spirit will no longer destroy the preparations, if they have been previously allowed to macerate forty-eight hours in a fluid formerly recommended by Mr. Richard Owen, but which that gentleman has since abandoned. Mr. Owen's liquid is composed of the mixture, at 50° Fahr., of three saturated solutions of common salt, alum, and corrosive sublimate. This fluid preserves and hardens the preparations, but injures materially the instruments of dissection, and is so powerful as even to attack the watch, guard, pins, or other ornaments which the anatomist may wear on his person. The substances employed are, however, very cheap, and by hardening the specimen, leave to morbid cavities heir natural shape, if they have been distended with air during the forty-eight hours of immersion. The glass vases used by M. Pigné, and made expressly by his direction for the purpose of receiving the specimens, are of cylindrical shape, well calculated to prevent any waste of space. The preparations should not be fixed on corks or wooden plates; the latter corrugate in spirit; the former, by losing heir tannin and colouring matter, alter the alcohol and render it opaque. In the Paris museums a simple and ingenious method of suspension is employed, and ts invention is due to M. Maissiat. The plan consists in attaching the specimen with silk strings, to thin glass sticks bent at right angles, fitting exactly the receiver, and forming invisible supporters. The vases are there closed by the superposition of a flat glass-lid, an advantageous substitute for the heavy and expensive stoppers which would be requisite if the shape of the receivers was different. The lid is fixed on the vase by a very adhesive cement consisting of slacked lime, finely powdered and mixed with a little albumen. This substance is applied with a brush, and is dry in the space of a few minutes; but f at any further period it is advisable to open the vase, the lid must be broken n order to obviate this consequence, M. Maissiat recommends the use of melted caoutchouc, to which is added a small proportion of vermilion or litharge, to give t consistency. This substance is applied with the hand on the edge of the vase, and of the lid, and simple pressure, assisted by a slight rotatory movement, closes the receiver in a manner at once solid, and which permits the vase o be opened at will, without any effort. Lastly, in order to render the preparation more visible, and to prevent the refraction of the rays of light through he fluid, a circumstance which often prevents the specimen from being distinct, M. Maissiat varnishes the top and the back of the receiver. All these precautions relative to the injections, and to the preservation of morbid specimens, said M. Pigné, in concluding this communication, although they may appear unimportant, nsure in reality the success of the preparation, and the permanent beauty of the results. Besides, they give neatness to private and public museums, and must serve materially the cause of true science, by rendering more attractive the study of morbid anatomy.

7. *Bifurcation of the Aorta.* By Dr. Weisse.—A boy fourteen years of age died with the usual symptoms of heart disease, and acute pericarditis was discovered on dissection. The aorta shortly after its origin from the left ventricle divided nto two branches, which after a short course again united, forming a dilated sac at the point of reunion. The left carotid and subclavian sprang from the left branch of the aorta, from the right branch there arose only the right subclavian, he right carotid springing from the divarication of the aorta.—*Brit. and For. Med. Rev.*, April, 1846, from *St. Petersburg Med. Trans.*, vol. vi.

8. *Case of Inverted Displacement of the Bladder.*—The fourteenth volume of the *Transactions of the Provincial Medical and Surgical Association* contains a very curious example of this malformation. The subject of it was a child between wo and three years of age. There was a fleshy-looking tumour projecting out between the labia pudendi: it was considered a vascular excrescence by the medical attendant; but, before he proceeded to put a ligature round it, he fortunately asked Mr. Crosse to see it. This gentleman was puzzled at first what to make of he case; but he saw quite enough to dissuade from the intended operation. The following is the description of the appearances:—"Towards the posterior part of he tumour, and on its sacral aspect, there was an aperture, which was conjectured o be the entrance into the displaced urethra. A very small female catheter easily entered this aperture, and passed along a channel a little to the left side of the median line: urine distilled in drops through the catheter, but there was not a gush, lthough the instrument had entered so far that we concluded it must have reached he cavity of the bladder. Besides what thus oozed through the catheter, slightly

tinged with blood, there was an oozing of urine from another source, which was not explained until a second and more strict examination, instituted a few days afterwards.

He then "found, concealed in a fold of the tumour, and near to the posterior junction of the labia, two orifices not far asunder, from which the urine oozed, and which were evidently the vesical terminations of the ureters. On pressing the tumour firmly, as if to reduce it like a hernia, I found it yield and pass gradually behind the symphysis pubis, and within the labia; and under a continuance of the taxis it all retired, leaving the external parts in their proper shape and position. A passage remained, through which the tumour on retiring had taken its course, which was actually the dilated urethra, into which I *could* and *did* introduce my little finger, until it fairly entered the cavity of the replaced bladder; fo it now became clearly demonstrated, that the vascular red tumour, externally presenting itself as first described, was the urinary bladder in its entire thickness. including its mucous, muscular, and peritoneal coats, prolapsed through the dilate urethra, and at the same time inverted or turned inside out."

The previous history of this case was imperfect. All that could be made ou was, that the tumour had existed for a considerable time, and been always attende with a *stillicidium urinæ*. Mr. Crosse has lately learned that his patient is still living and is now a healthy young woman, 18 years of age; but that unfortunately th incontinence of urine continues, although there has never been any relapse of th vesical inversion.

Dr. Murphy has related, in the Medical Gazette for 1833, a case very similar t the preceding one: it occurred in a female child four years old. At first. it wa mistaken for a *prolapsus ani;* a more attentive examination of the parts disclose the real nature of the displacement.

Mr. Crosse remarks that "when from difficult labour, the bladder and contiguou part of the vagina slough away, creating a free communication between thes two cavities, a real inversion of the bladder may take place through this abnorma aperture, of which I have known several instances; and in one the inversio prolapsed so far as to escape at the external labia, and presented on its surface th terminations of the ureters, from which the urine was observed to dribble co tinually; when the injury is to this extent, the afflicting symptoms can only b palliated, and have not, to my knowledge, admitted of cure."—*Med. Chirur Review*, April, 1846.

ORGANIC CHEMISTRY.

9. *On the Formation and Discrimination of Urinary Calculi.*—Prof. LIEBIG. in h lectures on Organic Chemistry, published in the *Lancet*, (Aug. 30, 1845,) has t following excellent remarks on this subject:

"Uric acid is always present, to a small amount, in the normal urine of ma It is partly to its presence that this fluid owes its well-known acid reaction. unhealthy conditions of the organism, the proportion of uric acid in the urine greatly augmented, and accumulating in the bladder, it gives rise to the formati of stones, or calculi. But, in addition to uric acid, there are other matters whi enter into the composition, or altogether constitute those concretions which clai our attention, and amongst these there are two organic substances particular deserving of a minute consideration, as an appendix to our exposition of t series of bodies formed from uric acid—namely, CYSTIC OXIDE, and ZANT OXIDE, or CYSTINE and ZANTHINE. I shall, moreover, take the opportunity of t lecture to treat of the subject generally, and include those urinary concretio which consist of inorganic matters.

"Under the names urinary concretions, stones, or calculi, (for these terms a synonymous,) are comprised all substances devoid of organization found detach in the urinary bladder. Similar concretions, indeed, are also formed in oth animal fluids, as the bile and the saliva. Wherever they are produced, they m arise from very various causes.

"Most of the fluids of the animal body, but more especially those destined e evacuated from the system, hold in solution certain compounds, which are ept dissolved only by very weak affinities, and therefore, as soon as the fluid as left the body, they become deposited in a solid form. When, therefore, these uids are retained longer than is ordinarily the case, or when, in consequence of nhealthy conditions of the organism, these matters which in the normal state, xist only in minute quantities, are produced in larger proportions, they deposit iemselves in a solid form, and the process being frequently repeated, concretions re formed, and, as we are now contemplating especially the case of the urine, re deposited in the bladder. In this manner those calculi are generated which onsist of uric acid and the urates.

“ Calculi may, however, be formed, when neither the proportionate amount of lid matter in solution is increased, nor the fluid retained a longer time than atural in the bladder, because the urine may, from various causes, undergo such change in its constitution, that those conditions essential to the solubility of cer-in compounds may be absent, and consequently these compounds necessarily ecome precipitated.

“ Phosphate of lime is perfectly insoluble in pure water; its solubility in urine epends upon the existence of free acid in that fluid. If, from any cause, the rine becomes alkaline, as, for instance, when organic salts with alkaline bases re taken into the stomach, which, as is well known, are converted into carbo-ates during their passage through the organism, then the conditions essential to ie solubility of phosphate of lime are removed, and this salt is precipitated. All alculi consisting of phosphate of lime are produced in this manner.

“ The calculi containing ammonio-magnesian phosphate are also produced in a ianner precisely analogous to this. In many animal fluids, particularly the urine, hosphate of magnesia is found in solution. Normal urine contains no ammonia, ut when, from any cause, ammonia is generated, the phosphate of magnesia no nger remains in solution, but is precipitated as ammonio-phosphate of magnesia.

“ Besides the foregoing, there is another cause of the formation of urinary con-retions. In diseased conditions of the system, peculiar compounds are not nfrequently formed which are never produced in the healthy organism, and eing perfectly insoluble in urine, are immediately deposited in a solid form from iat fluid. In this manner oxalate of lime calculi are formed, and those concre-ons of organic matter termed cystic oxide and zanthic oxide.

“ But beyond these chemical causes of calculi, certain mechanical conditions ave almost always more or less influence upon their formation in the urinary ladder. When any of these states which I have enumerated exist, and, in con-equence, deposits occur of uric acid, urates, insoluble phosphates, oxalate of me, &c., in small quantities, it does not necessarily happen that calculi are ormed, but, in most cases, the urine flowing off, carries with it through the rethra the sediments suspended in it, or already deposited. When, however, ie bladder contains mucus, these sediments are apt to adhere to it, and become nited into masses. Very often a foreign body, which has accidentally got into ie bladder, forms the nucleus upon which these sediments are deposited, and to hich they adhere, the irritation they occasion on the internal surface of the blad-er induces the secretion of mucus in which the urinary deposits accumulate, and iey thus become the direct cause of the formation of calculi.

“ The calculi formed in the human bladder differ, therefore, in their composition; nd whilst there is a great variety, the following may be taken as the characteristic f most of them:—

° calculi, composed of *uric acid.*
° “ “ *urate of ammonia.*
° “ “ *oxalate of lime.*
° “ “ *phosphate of lime.*
° “ “ *ammonia-phosphate of magnesia.*
° “ “ *a mixture of phosphate of lime and ammonia-phosphate of magnesia.*
° “ “ *cystic oxide* or *cystine.*
° “ “ *zanthic oxide* or *zanthine.*

“ *Uric Acid Calculi.*—The calculi which are most frequently found in the bladder are those composed chiefly of uric acid. They are generally of a reddish-brow or yellowish colour, which is derived from the colouring matter of the urin Their surface is sometimes smooth, sometimes rough; their size, of course, ver variable. The fracture of these calculi sometimes presents a crystaline textur at others, it is smooth, and often they are made up of concentric layers. They ar rather hard, so that they may be just scraped with a knife. Calculi are neve composed of perfectly pure uric acid; they always contain hardened mucus, whic binds the uric acid together, and small quantities of alkaline urates, urate of lim phosphate of lime, and ammonio-phosphate of magnesia in admixture. In th inverse proportion to the prevalence of these impurities, these calculi present th characteristic properties of uric acid. You will, however, be able, under all ci cumstances, to distinguish them from all others, if you remember the behavio of uric acid with nitric acid, which I minutely described to you in a former lectur The best way to apply nitric acid as a test, is to place a fragment of the calculu to be examined upon a platina spatula, and drop upon it some common nitric aci When uric acid is present, a lively effervescence ensues, with the cause of whic you are well acquainted. Evaporate the resulting solution by a low heat, and ad ammonia, when a purple colour is produced, characteristic of the presence of ur acid.

" *Urate of Ammonia Calculi.*—Calculi composed of URATE OF AMMONIA are much rarer occurrence than the former, particularly in a pure state. They a generally found in children. They present various shades of colour, between whitish-gray and a light-brown; they have usually a smooth surface and eart fracture, and are made up of concentric layers, which are easily separated fro each other. As I have just stated, they very seldom occur pure, commonly co taining uric acid and small quantities of the phosphates. It is very easy to di tinguish these calculi from those composed of uric acid. They dissolve in boili water, except there are admixtures of other substances; whilst uric acid is, as y must remember, very slightly soluble. When you have examined a calculus, a proved it to contain uric acid, and it also yields ammonia when treated with pota this must not be supposed to prove that it is urate of ammonia; the generation ammonia may also arise from the decomposition of ammonia-phosphate of ma nesia present in the calculus.

" *Oxalate of Lime Calculi.*—Urinary concretions which consist of OXALATE OF LI occur frequently. They are distinguished by their external appearance: tho with a rugged surface, dark colour, and larger size, are termed MULBERRY CALCU whilst smaller ones, with a smooth surface, are known as HEMP-SEED CALCU These calculi are always very hard, and imperfectly laminated. They alm invariably contain small quantities of uric acid, phosphates, and animal matter uncertain composition. They are insoluble in water and alkaline fluids, b generally dissolve completely in acids. The mulberry calculi are easily disti guished by their behaviour before the blowpipe: the oxalate of lime is convert into a carbonate by heat, and this latter salt loses its carbonic acid at a higher te perature, and becomes caustic lime. After being subjected to the action of t blowpipe, therefore, mulberry calculi may be slaked by water, and impart to an alkaline reaction. As, however, many calculi contain some amount of c bonate of lime, which, if submitted to the process I have described, would produ the same result—namely, a residuum, which slakes on the application of water, you should never omit the employment of the usual tests for the presence oxalic acid. For this purpose the calculus is to be pulverized and boiled wi carbonate of potass; by this means carbonate of lime and oxalate of potass will formed; filter, and add an excess of acetic acid to the filtrate, to decompose t surplus of carbonate of potass, then, if a solution of sulphate of lime be adde oxalate of lime will be precipitated.

" *Phosphate of Lime Calculi.*—Calculi composed of PHOSPHATE OF LIME are ve rare. Up to the present moment no one has had an opportunity of examining su except Dr. Wollaston. Those which he has described had a smooth surface a a chalky fracture, in which distinct layers could be perceived. They contain an organic matter by which the phosphate of lime was agglutinated, and th consequently became black before the blowpipe. By the continued application heat they again became white, and finally fused.

“ *Ammonio-Phosphate of Magnesia Calculi.*—Those calculi which consist of AMIONIO-PHOSPHATE OF MAGNESIA are met with frequently, but those in which this louble salt is combined with phosphate of lime are still more common. Both hese species of concretion are similar in appearance; their surface is generally ough, and they have internally an earthy or chalky appearance, very rarely xhibiting a crystaline structure. Sometimes, however, they are covered with rystals externally, and occasionally cavities are found in them filled with crystalzed ammonia-phosphate of magnesia. There is little difficulty in recognizing hese calculi, or in discriminating between the two kinds, notwithstanding the imilarity of their external appearance. Ammonia is evolved from both kinds vhen acted on by caustic potash. Both dissolve readily in nitric and muriatic cids. To an acid solution, ammonia is first to be added, until a feeble alkaline eaction is exhibited, when a slight precipitate forms, then acetic acid, until the recipitate disappears. The addition of chloride of iron, and boiling the solution, auses all the phosphoric acid to be deposited in the form of phosphate of iron. he filtered liquid is then to be tested in the ordinary manner for lime and for nagnesia.

“ We now arrive at those urinary concretions which, as I have told you, contain ertain peculiar organic substances; of these there are two species; and it is both nteresting and useful to become acquainted with their composition and properties. hese calculi occur but very rarely. One of these species of calculi, however, as been observed more frequently in France. It was originally discovered by r. Wollaston, and is called cystic oxide, or cystine. It contains, as a constituent, ulphur.

“ *Cystine Calculi.*—Cystic oxide calculi, as I have already told you, are of rare ccurrence; they consist of somewhat compact crystaline masses, of a yellowish r greenish colour, and smooth surface. They may be broken into fragments vithout difficulty; their fracture is crystaline, with the lustre of wax, and their ragments are translucent at their angles. Such calculi generally consist of pure ystine; sometimes, however, their surface is coated with phosphates.

“ Urinary calculi composed of cystine are readily soluble in the fixed alkalies nd in ammonia. They are thus distinguished from those consisting of phosphate f lime, oxalate of lime, or phosphate of magnesia, these being insoluble in mmonia; whilst they are distinguished from those containing uric acid by their olubility in acids.

“ In order to obtain cystine in a pure state, cystic oxide calculi are dissolved in austic potass, and acetic acid added in excess to the boiling hot solution; upon ooling, the cystine separates in colourless, transparent, lamellar crystals. When filtered solution of cystine in ammonia is left to evaporate gradually, more perect crystals are obtained.

“ *Zanthine Calculi.*—But there is another species of calculi consisting of a peculiar rganic substance, quite different in constitution to cystine. This was discovered y MARCET, and has been termed, *zanthic oxide*, zanthine, uric oxide, and urinous cid. The designation ZANTHINE, appears to be preferable, and by this we shall ontinue to speak of it.

“ The calculi containing zanthine are as rare as those with cystine; their surface s generally smooth and shining, of a whitish colour, but sometimes without ustre; they are rather hard, and their fracture exhibits a brownish flesh colour; ey consist of concentric layers without any appearance of a crystaline formaion. When rubbed or scraped, they acquire the lustre of wax. These calculi how a very characteristic reaction with nitric acid. This acid dissolves them at e boiling point without the evolution of gas. This distinguishes them perfectly rom uric acid calculi. The solution in nitric acid being evaporated, leaves a itron-yellow residue, soluble in caustic potass, and in this menstruum acquiring a eddish-yellow tint. The characteristic purple colour which uric acid gives with itric acid and ammonia, cannot in any way be produced with zanthine.

“ To obtain this organic substance pure, the calculi containing it must be dissolved n caustic potash, and the solution saturated with carbonic acid. The zanthine eparates in the form of a white precipitate, which contains no trace of potash. n being dried, it forms hard pale-yellow fragments, which acquire lustre on eing rubbed. Zanthine is also soluble in solutions of alkaline carbonates, in small quantities, in boiling water, and in oxalic and muriatic acids. It also dissolves in concentrated sulphuric acid, forming a yellow-coloured solution, from which nothing is precipitated on adding water."

10. *Urine in Typhus.*—SCHÖNLEIN's opinion that the urine in the regular course of typhus is at first dark and very acid, subsequently neutral and even alkaline and finally again becomes acid at the commencement of convalescence, ha received further confirmation from the following observations quoted by Simon in his "Beiträge."

In one case the urine became faintly alkaline on the seventh day after admission; it remained either alkaline or neutral for seven or eight days; and then became faintly acid and gradually clearer, as soon as the patient exhibited symptoms of convalescence.

In a second (very severe) case the urine remained acid till the twenty-firs day; it then became neutral, and afterwards alkaline, for the space of ten o eleven days, when it returned to its normal reaction.

In two other cases the urine became alkaline previously to the fourteenth da of the disease; in one of them the secretion was so thoroughly saturated wit carbonate of ammonia, and evolved so disgusting an odour as to be perceptibl over the whole ward. This urine deposited a considerable sediment of pus c mucus, mixed with the phosphates of lime and magnesia, and effervesced briskl on the addition of an acid. In one of these cases the urine remained alkaline fo fourteen, and in the other, for twenty-one days, before it resumed its acid reactio Both cases recovered.

It is worthy of notice, that a deposition of urate of ammonia not unfrequentl precedes the occurrence of alkalinity and the appearance of the earthy phosphate which, as Schönlein remarks, may be regarded as the precursors of a favourabl change.

During the mild form of typhus recently (1843) prevalent in Berlin, he notice these changes in several cases, and in fact, when from being alkaline the urin again became acid, and at the same time clear and abundant, there was scarcel any risk in giving a favourable prognosis.—*Day's Report* in *Ranking's Abstrac* vol. ii.

11. *Urostealith, a new substance found in a Urinary Calculus.*—Dr. HELLER a nounces the discovery in a urinary calculus of a new substance, to which he h given the name of urostealith. It is soluble in carbonate of soda; and when th remedy is administered, urostealith in a state of solution is found in the urine.

The patient was a man of tolerably good constitution, aged 24 years; he com plained of pain in the region of the right kidney, and difficulty in micturition, occ sionally passing small elastic soft concretions. These were examined by Helle and found to be perfectly soluble in alkalies, with which they formed a soap.- *Ibid.*, from *Archiv. für Phys. und Patholog. Chem.*, vol. ii. p. 1.

MATERIA MEDICA AND PHARMACY.

12. *On the proportion of Nitrogen contained in alimentary substances taken from b the organic kingdoms as a comparative measure of their nutritive powers.* By Dr. SCHLOSSBERGER and ALEX. KEMP, Assistant Chemical Teachers in the University Edinburgh. (*Edinburgh Med. and Surg. Journ.*, April, 1846.)—In this very intere ing paper the authors observe that "the distinction between the elements of t reproductive and those of the respiratory functions, is probably one of the m fertile ideas for which physiology is indebted to modern chemistry; even if do not admit that division in its full extent, nevertheless we must allow it to b beautifully conceived idea, and one founded on a great amount of observation. may be assumed with safety that no other classification of the substances co prised under the vague designation of alimentary bodies, has in an equal deg represented the essential differences in their chemical composition and their p siological effects, or has presented to the eye of the mind the important part wh

hese substances perform, as the above-mentioned distinction, which is also identical with that of *azotized* and *non-azotized* bodies.

"In order to give some indication of the state of confusion which existed, even n this most elementary proposition of dietetics, previous to that distinction being nade, it may not be more than necessary to mention the idea of that classical uthor, Dr. Prout,* that the nutritive power is in direct proportion to the quantity of carbon. At the present day not a single fact is known which can support the dea of the animal body being able to form azotized from non-azotized substances, —possibly, under the influence of ammonia or of nitrogen from the atmosphere; on the contrary, all experiments, as well as daily observation, seem to prove the absolute necessity of azotized food for the preservation of the individual. Chemistry has likewise demonstrated the presence of a more or less high, but constant proportion of nitrogen in all the tissues and fluids of the animal body, while in all hose substances which, according to our modern ideas, are the most nutritive, namely, the *proteine* compounds, the carbon is present in medium quantity. Those substances esteemed by Prout the most nourishing, because richest in carbon, as he fats and oils, must be altogether excluded from the list of reproductive bodies, except in so far as fatty matter is necessary to the formation of animal cells. The chemical physiologist could make use of the theory of Prout, in measuring the fitness of the bodies necessary to respiration, if along with the carbon could be aken into account the quantity of combustible or unoxidized hydrogen contained n them; but for those substances, which in the strict sense of the word are capable of being transformed into blood and animal tissue, according to our present knowledge, the capability for these purposes may be estimated relatively by the amount of nitrogen. This has been already done to a certain extent by the researches of several chemists and physiologists, but, so far as we are aware, it has been confined to vegetables; and it therefore appeared to us not to be without interest to make use of the same principle in extending the investigation to the various alimentary substances taken from the animal kingdom, and so to give to the physiologist a basis founded on facts in a department which has hitherto been so defective in the mysterious doctrine of nutrition.

"Already Boussingault and Liebig have demonstrated, that in general the amount of proteine compound, and therefore that of nitrogen, is in a direct ratio to the phosphates; this proposition has as yet been extended only to vegetable matters, but will most probably preserve its value when applied likewise to those derived from animals. In so far as the nitrogen may be taken as an indication of the quantity of these salts, we could not find any observations as to how far it might be also applied to the gelatigenous compounds; and we have alluded to this as a very interesting field for future research, particularly with regard to the phosphate of lime, which seems so universal and so necessary to the whole animal economy.

"It seems to be at present a proper time to overcome an objection, which, if not alluded to, might have been made against our attempt to determine the nutritive power of animal aliments; it is with regard to the delicate question of the use of animal gelatine, which seemed to Mulder, and likewise to us, as not at all decided by the experiments lately made at Paris. It is a fact sufficiently proved by the experiments of Magendie, Tiedemann and Gmelin, that any substance, even the most nourishing, if very simple and used without admixture, cannot sustain animal life for any length of time; and if it was proved at Paris that dogs fed exclusively on gelatine perish, it is far from being just to conclude that the substance is not nutritive, as we should be compelled to apply the same rule to albumen and fibrine, by the exclusive use of which an animal would no less speedily perish. At all events gelatine has a high value as nutriment, if even that value arises alone from its being useful in the formation of gelatigenous tissues; in addition, the gelatigenous tissues, as well as those containing proteine, in regard to their formation and chemical constitution, seem to lie in close relation, although that relation is at present not perfectly understood.† The experience of our best physicians at the bedside of the patient tends to prove that during convalescence a well-prepared gelatinous diet, but not exclusively gelatinous, is highly nutritious.

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* See Mayo's Outlines of Human Physiology, p. 206, second edition. London, 1829.

† See Mulder's Chemistry of Animal and Vegetable Physiology, translated by Fromberg, 319 and following pages.

"All organic alimentary substances, as presented to us by nature, are mixtures, but seem to be pretty constant in their composition, although variously modified by our different modes of cooking them. Of such natural mixtures, the greater part taken from vegetable bodies have already had the proportion of nitrogen contained in them determined by previous observers; and we believe we shall best introduce the subject by a concise representation of that which has been done in regard to the vegetable part of our aliments, which will likewise afford the best means of comparing the results of our experiments on animal substances.

"The following table shows the amount of nitrogen contained in 100 parts of the dry vegetable bodies named in it:—

Rice,	1.39	Boussingault, *Economie Rurale.* Paris, 1844, tome 2me, p. 438.
Potatoes,	1·5	
Turnips,	1·7	
Rye,	1·7	
Oats,	2·2	
Wheat,	2·0 to 2·3	
Carrots,	2·4	
Barley,	2·0	
Maize,	2·0	
Peas,	3·8	
Lentils,	4·4	
Haricots,	4·5	
Beans,	5·1	
White bread,	2·27	R. D. Thomson in the London and Edinburgh Philosophical Magazine fo November 15, 1843.
Brown bread,	2·63	
Glasgow unfermented bread,	2·14	
Essex flour,	2·17	
Canada flour,	2·21	
Lothian flour,	1·96	
United States flour,	1·82	
Agaricus deliciosus,	4·6	Schlossberger and Dœpping, Liebig' *Annalen* for October, 1844, Chemica Gazette, July, 1845.
" russula,	4·2	
" cantharellus,	3·2	

"Boussingault has calculated from the results of his experiments, that which he calls the equivalent nutritive powers of these substances for the domestic herbivorous animals, and Thomson has also given one for those bodies which he examined."

The authors then give an account of their own experiments. All the substance made the subject of observation were first carefully dried at 212° F., and thei analyzed according to the method of Varentrapp and Will, slightly modified t overcome some practical difficulties.

In each experiment the amount of ammonio-chloride of platinum yielded, wit its correspondent equivalent of nitrogen, is given. We shall present the result for the sake of brevity in a tabular form.

	Per cent. of Nitrogen.
Cows' milk,	3·78
Human milk,*	1·59
Dunlop cheese,	6·03
Gonda cheese,	7·11
Cheshire cheese,	6·75
Double Gloucester do.,	6·98
Double Gloucester cheese, very old, and abounding in mites and mould,	5·27
Yolk of the egg of the common fowl,	4·86
Oyster (*O. edulis*),†	5·25

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* Human milk is, according to most analyses, one of the poorest in caseine, an in this respect is very far inferior to that of the cow, but in consequence of this ma probably be more easily digested. The amount of nitrogen in milk, which correspond to that of caseine, comes much nearer to the proportion contained in vegetables tha any other kind of aliment from the animal kingdom.

† As this seemed a low result, the analysis was repeated, which confirmed the firs experiment.

	Per cent. of Nitrogen.
Yellow matter (liver and bile) from the crab-fish, *C. communis*,	7·52
Common mussel, (*Mytilus edulis*)	8·44
The same previously boiled,	10·51
Ox liver,	10·66
Pigeon liver,	11·80
Portable soup,	12·16
Common eel, raw flesh,	6·91
Do. do. boiled flesh,	6·82
Do. do. first washed in distilled water, and afterwards boiled in alcohol as long as any mat. separated,	14·45
Flesh of salmon, (*S. fario*),	12·35
Do. do. do. boiled,	9·70
Do. do. do. purified muscular fibre,	15·62
Raw herring, (*C. harengus*,)	14·48
Boiled herring,	12·85
Purified muscle of herring,	14·54
Milt of the herring,	14·69
Flesh of the haddock,	14·64
Boiled haddock,	12·98*
Purified muscle of the haddock,	15·72
Flesh of the flounder, (*Platessa flessus*,)	14·28
Boiled flounder,	15·18
Purified muscle of flounder,	15·71
Flesh of the skate, (*Raia batis*,)	15·39
Boiled skate,	15·22
Boiled muscle taken from the claw of the crab-fish,	13·66
Flesh of the pigeon,	12·15
Boiled pigeon,	12·33
Purified muscle of the pigeon,	13·15
Lamb,	13·26
Purified fibre of lamb,	14·56
Mutton,	12·30†
Boiled mutton,	13·55
Purified fibre from mutton,	14·76
Veal,	13·89
Veal, boiled,	14·50
Veal, purified fibre,	15·78
Ox-beef,	14·00
Ox-beef, boiled,	14·98
Purified fibre of beef,	14·88
Lungs of the ox,	14·81
Pork-ham, boiled,	12·48
Do. do. purified fibre,	14·21
White of fowls' egg,	13·44

To these experiments the authors add the following remarks:—"The proportion of nitrogen in purified muscular fibre seems to be identical, from whatever part of the animal kingdom it may be obtained; and the differences given by the results of analysis may be fully explained by the difficulty, or even impossibility, of analyzing it in an equally pure or impure condition, as obtained from different animals, in which it is always mixed with cellular tissue, minute vessels, and nerves. Moreover, it is extremely difficult to get rid of traces of fat and hematine.

"That the chemical properties of muscular fibre in the whole animal kingdom are identical, one of us endeavoured to prove in a former research (Schlossberger, *Vergleichende Untersuchungen uber das Fleisch verschiedener Thiere.* Stuttgardt, 1840). In contradiction to a very generally received opinion, it appears to us that the muscles of fish are as rich in nitrogen as those of higher animals; at first sight, however, owing to the presence of a greater quantity of water, and in some fishes, as the eel, to a difficultly separable fat, its amount appears very much lower. Further, as the proximate principles are essentially the same in both classes of animals, it seems to us that they should be equally nutritive, although this proposition is also directly opposed to another very general prejudice. According to our scale, the oyster does not seem nearly so nourishing as it is generally reputed to be by common opinion, although it is possible that the proteine compounds in the lower classes of animals may be found to be much richer in phosphorus, in sulphur, and in phosphates than in the higher. Should this prove to be the case, we can see, that although the proportion of nitrogen may not be so great, nevertheless that they might act more powerfully as *stimulants*, which, as regards th oyster, is believed by some of our best physicians. We intend in a future serie of experiments to direct our attention to this part of the subject.

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* Whereas, the authors observe, in the case of the herring, salmon, haddock, and eel, the proportion of nitrogen was considerably diminished by boiling the flesh for about half an hour, the reverse of this occurred in some of the other cases; for example, in the mussel, the flesh of the ox and calf. These are mere observations of facts, arising probably from accidental causes: the modification which meat undergoes by boiling not being sufficiently understood by chemists at present, although Mulder has proved the formation of oxide of proteine by it; from the observations just made, no general conclusion can be drawn, because they do not seem to coincide, at least at first sight.

† In this case, the authors remark, it was found extremely difficult to separate mechanically the whole of the fat; it is necessary to notice this, as the numbers are somewhat lower than might have been expected.

“In order that our views on this subject should not be misunderstood, it is necessary for us to state, that we do not consider the proportion of nitrogen, taken alone to be an absolute measure of the nutritive power of our aliments; but as there i a total want of any positive data in regard to this subject, and as so many differen and contradictory opinions are given in the works on dietetics,* it must be grante that any attempt to fix a standard for comparison is not without interest.

“With respect to the capability for nutrition, we are far from denying that th physical condition, the state of admixture, the peculiar kind of proteine compoun the amount of water and other inorganic matters, of fat, and lastly, the effects o cookery, must necessarily have a very great influence on the physiological effect of our aliments.

“There is one consideration in particular which requires to be noticed, namel the distinction between the absolute amount of the nutritive matter, and that portion of it which is in such a state as to be easily digested and assimilated by th system, in the same way as a soil produced from minerals abounding in alkalin salts is not always the most fertile as regards plants with a predominance of alkaline bases, but the fertility of which depends on the amount of these bodies contained in a state in which they can be taken up and made use of by the plan Thus an aliment abounding in nutritive matter may be inferior to one with a muc smaller quantity as regards the nourishing effects produced by it; if in the first o these cases only a part, in the second the whole may be easily absorbed an assimilated. Here we must rely upon the experiments of the physiologist as t the degree of digestibility of different substances; and there already exists an excellent basis in the researches of Beaumont and of Blondlot. This is one of th questions, in which, by the co-operation alone of the physiologist and chemis any progress can be expected to be made in the elucidation of this point. If th work were once fairly begun by the physiologist, chemistry would not be long i rendering that assistance which would then be found necessary; for example, i the various experiments which might be made in artificial digestion, from th results of which as one element in the calculation taken along with the proportio of nitrogen as the other, it would at once be possible to determine scientificall the real nutritive value of the different kinds of aliment; the importance to ou dietetics of this method of determination, which at present exists only in ide would then not only be felt by the patient, but by the whole human race.

“Table of the comparative proportion of nutriment in our organic aliments. we assume the amount of nitrogen in human milk, perfectly dried at 212° F., be represented by 100, we can then express the degree of nutritive power of th other alimentary substances by the following numbers:—

Vegetable.		Peas,	23
Rice,	81	Agaricus russulu,	2
Potatoes,	84	Lentils,	27
Turnips,	106	Haricot beans,	2
Rye,	106	Agaricus deliciosus,	2
Maize,	100 to 125	Beans,	3
Barley,	125	*Animal.*	
Unfermented bread of Glasgow,	134	Human milk,	1
Oats,	138	Cow's milk,	2
White bread,	142	Oyster.	3
Wheat,	119 to 144	Yolk of egg,	3
Carrots,	150	Cheese,	331 to 4
Brown bread,	166	Eel, raw,	4
Agaricus cantharellus,	201	“ boiled,	4

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* See all works from Plenk's *Bromatologia* to the latest, as Paris's Treatise on Di as well as our standard works on Materia Medica, and we think it will be allow that we have not asserted too much.

Liver of crabfish,	471
Mussel, raw,	528
" boiled,	660
Ox-liver, raw,	570
Pork-ham, raw,	539
" boiled,	807
Salmon, raw,	776
" boiled,	610
Liver of pigeon,	742
Portable soup,	764
White of egg,	845
Crabfish, boiled,	859
Skate, raw,	859
Skate, boiled,	956
Herring, raw,	910
" boiled,	808
" milt of,	924
Haddock, raw,	920
" boiled,	816
Flounder, raw,	898
" boiled,	954
Pigeon, raw,	756
" boiled,	827
Lamb, raw,	833
Mutton, raw,	773
" boiled,	852
Veal, raw,	873
Veal, boiled,	911
Beef, raw,	880
" boiled,	942
Ox-lung,	931

Purified muscular fibre from various animals.

Fibre of eel,	908
" salmon,	982
" herring.	914
" haddock,	988
" flounder,	988
" pigeno,	775
" lamb,	916
" sheep,	928
" calf,	993
" ox,	935
" sow,	893

Proximate principles of animals calculated from the quantity of nitrogen as determined by Mulder.

Pure proteine,	1006
" albumen,	996
" fibrine,	999
" caseine,	1003
" gelatine,	1128
" chondrine,	910

13. *On the Properties of the Leaves of the Oxalis Crussicaulis, and their use as an Astringent, especially in Hemorrhages and Chronic Catarrh.* By Dr. Montain.—This species of oxalis is a native of Peru. Its roots are numerous, and constitute, as do also the leaves, a very agreeable and nourishing article of food. The leaves likewise furnish an astringent juice, which is very acid, but agreeable, and which keeps for a long time without spoiling.

A little before frost, the stems are collected, submitted to strong pressure, and a large quantity of juice is obtained. By macerating the residuum in a certain quantity of water, we obtain a liquid slightly astringent. This juice unites easily with the sugar to form a syrup, of an acid and slightly aromatic flavour. When mixed with water it furnishes an agreeable drink.

M. Montain administers the juice either pure or sweetened, and in different proportions. The dose internally—is three to six tablespoonfuls a day. It is sometimes administered in the form of injection. It is employed in this last way, and with success in cases of vesicular polypus of the nasal fossæ.

Chronic metrorrhagia, and most other hemorrhages of the same nature, not connected with any organic affection, seem to be much benefited by its use after fifteen days treatment. Chronic catarrh, diarrhœa and dysentery, are successfully combated by the juice of the oxalis, either pure, weakened with water, or in the form of syrup. It is also efficacious in cases of blennorrhagia, especially those which resist the effects of copaiva and cubebs.

This astringent M. M. considers worthy of attention, as succeeding in some cases where other articles of the same class have failed.—*Journal des Connaissances Medico-Chirurgicales*, Nov. 1845, from *Journ. de Méd. de Lyon*, July, 1845.

14. *On Amorphous Quinine as it exists in the substance known in commerce as quinoidine.*—[The *Lancet* of May 28th contains a very important paper on this subject, by Baron Liebig, which we transfer to our pages entire.]

In the preparation of sulphate of quinine, after all the crystals which can be obtained are separated, a dark-coloured mother-liquor remains, having an extremely bitter taste. On the addition of an alkaline carbonate, this liquid loses its colour and bitter taste, depositing, at the same time, a yellowish-white, or brownish precipitate, which, after being rinsed with water, and exposed to a gentle heat, agglutinates into a coherent mass, exhibiting the appearance of resin.

From the experiments of Sertuerner, Thiele, Bucholz, Junior, Koch, and other chemists, it has been long known that this resinous substance possesses the properties of a base, that it neutralizes acids perfectly; but the salts which are formed by these combinations with acids, have baffled all attempts at crystalization.

Sertuerner, who was the first chemist to separate this resinous substance from the mother-liquor of sulphate of quinine, considered it to be a distinct and peculiar organic base, existing in yellow and red cinchona barks, associated with quinine and cinchonine. He assigned to this, as he supposed, new substance, the name quinoidine, and greatly extolled its medicinal efficacy, in which he declared it was in all respects equal to quinine. In his journal, (*Uber die neuester Furtschritte in der Chemie, Physik und Heilkunde*, bd. iii., No. 2, page 269,) he terms it "a true fever-destroyer."

Subsequently, this substance, under the term quinoidine, has been employed medicinally in many places, and even introduced into the lists of commercial articles or price currents of many of the druggists of Germany.

In certain mother-liquors of quinine left in the preparation of the sulphate, which were analyzed by Henry and Delondre, and also a sample of quinoidine examined by Geiger, these able chemists discovered an amount of quinine and cinchonine, accompanied by a resinous substance which they considered impeded the crystalization of the sulphates of the two bases, and which in their experiments they failed to separate. The results obtained by these chemists, and the inferences obviously deducible from these results, rendered it indubitable that the medicinal efficacy of quinoidine must vary according to the greater or less proportion of quinine it may happen to contain. Now, there cannot be a doubt but that this uncertainty with respect to the relative amount of quinine in commercial quinoidine, has prevented many physicians from prescribing the latter as a remedy, notwithstanding the testimony borne to its efficacy.

Having occasion, some time since, to pass through Coblentz, I procured from Messrs. Jobst & Co., of that town, a sample of quinoidine, for the purpose of employing it for the preparation of quinoleine—a substance discovered by Gerhardt to result from the transformation of quinine, and to which much scientific interest attaches, in consequence of the recent discovery of Professor A. W. Hoffman, that quinoleine is identical with leucol, a body which is one of the components of the essential oil of tar, prepared from anthracite coal. It then occurred to me, that if the sample of quinoidine which I had procured contained quinine, it must yield a corresponding amount of quinoleine, and that, consequently, a very simple method of testing quinoidine for the amount of quinine it may contain might be based upon this property of quinine to be transformed into quinoleine.

On subjecting the sample I had obtained (which amounted to several ounces) to distillation with strong potass ley, I confess I was surprised at the large amount of quinoleine produced, which proved the presence of a far larger proportion of quinine than could have been anticipated. This unexpected result induced me to subject quinoidine to a stricter examination; and in order to avoid being misled by accidental circumstances, I procured, beside the Coblentz sample, specimens from Messrs. Hess, Leissler, and Fiedler, of Mayence, and from Messrs. Mettenheimer and Simon, at Frankfort, and also from a druggist at Hamburgh.

These various samples of quinoidine I received partly in irregularly-shaped masses, and partly as square cakes of a darker or lighter brown colour, which, by the warmth of the hand, became soft and flexible, but were readily pulverizable in the cold. The operation of powdering it imparted to it an extraordinary degree of elasticity. All these samples were completely insoluble in cold water, but scantily soluble in hot water, imparting to the latter a strongly bitter taste. I may here, however, observe, in passing, that some commercial specimens which I have since seen are soluble in cold water, arising from a considerable admixture of other substances; differing, also, from the same cause, in many of the following properties:—

All the first samples I speak of dissolved in alcohol, in the proportion of one part to two of the menstruum; and from this alcoholic solution, water precipitates copious, yellowish-white, resinous flakes, which cohere into a mass like the original quinoidine. Dilute mineral acids, as well as most of the organic acids, dissolved my samples entirely, and by adding a sufficient amount of the substance, became completely neutralized. From these solutions in acids, ammonia and alkaline carbonates precipitated resinous flakes. On agitating the fluid containing these flakes and the flocculent precipitate with an equal volume of ether, the precipitate dissolves in the ether, *with the exception of a dark-brown residue.* On evaporating the ether, a resinous mass is obtained, having all the properties of an organic alkaloid.

Its salts are precipitated by tannic acid. Chloride of platinum produces in its solution in hydrochloric acid a yellow precipitate. Moreover, it dissolves completely in a solution of sulphate of copper with the separation of oxide of copper. Now there exists no resin, nor, indeed, any other substance similar to resin, which possesses this peculiar property.

These observations can leave no doubt whatever as to the chemical character of a considerable proportion of the residue to which the term quinoidine has been applied—namely, that it is a true organic base.

On subjecting the purified substance to elementary analysis, the following were the results:—

1st.—From the quinoidine of Mayence, 0.490 grammes yielded 1.3204 grammes of carbonic acid, and 0.3395 grammes of water.

2d.—From the quinoidine of Frankfort, 0.618 grammes yielded 1.6575 grammes of carbonic acid, and 0.4250 grammes of water.

3d.—From the quinoidine of Coblentz, 0.3475 grammes yielded 0.9475 grammes of carbonic acid, and 0.2375 grammes of water.

According to these analyses, this substance contains

	i.		ii.		iii.
Carbon . . .	73.49	...	73.14	...	74.33*
Hydrogen . .	7.69	...	7.64	...	7.57

The determination of the nitrogen, by the method of Verrentrapp and Will, yielded the following results:—

0.515 afforded 0.289 of platinum.
0.617 " 0.401 "

And, consequently, the substance under examination contains, according to the first analysis, 8.04 of nitrogen: according to the second, 9.54 of nitrogen—the medium of the two analysis giving us as its amount of nitrogen, 8.79.

Analysis of the Chloride of Platinum and the Base from Quinoidine, (Amorphous Quinine.)

I.—0.6663 grammes of the double salt yielded 0.1755 of platinum; 0.8700 grammes of the double salt yielded 1.349 carbonic acid, and 0.303 of water.

II.—0.881 grammes of double salt yielded 0.224 of platinum.

III.—1.0668 grammes of double salt yielded 0.2715 of platinum.

From these analyses, therefore, the following are the proportions of carbon, hydrogen, and platinum, which exist in 100 parts of the chloride of platinum, and the substance derived from quinoidine:—

	i.		ii.		iii.
Carbon . . .	32.44				
Hydrogen . .	3.86				
Platinum . .	26.33	...	26.32	...	26.45

Now, if we compare the proportion of carbon, hydrogen, and platinum, existing in the chloride of platinum and this base, derived from quinoidine, with the amount of the same elements present in the corresponding chloride of platinum and quinine; and, further, the amount of carbon, hydrogen, and nitrogen contained in the substance under examination, with the proportion of the same elements as they exist in quinine; we perceive at once that the two substances have identically the same composition.

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* Carbon = 75, according to Prout and Dumas.

Quinine, according to the formula,

$$C_{20}H_{12}NO_2$$

contains—

Carbon, 74.33; hydrogen, 7.75; nitrogen, 8.62.

Chloride of platinum and quinine, according to the formula,

$$Cl\ H\ C_{20}H_{12}NO_2+Cl\ Pt$$

contains—

Carbon, 32.38; hydrogen, 3.53; platinum, 26.83.

The inference from these experiments, then, is irresistible; the uncrystaline substance derived from quinoidine bears exactly the same relation to ordinary quinine that uncrystaline sugar (barley-sugar) bears to crystaline (sugar-candy). Both yield the same products of decomposition; both have the same atomic weight, and identically the same composition; they differ only in form: in one word, the one is crystaline, the other, *amorphous.*

I deem this to be an important discovery, when we consider the high price of quinine, the possibility of a check to the supply of cinchona bark from the countries producing it, and the amount of the crude quinoidine which has accumulated since the manufacture of sulphate of quinine was commenced. Quinine, indeed, seems to be absolutely indispensable for the treatment of diseases; the progress of civilization in modern times has depended, far more than has been conceived, upon the discovery of a remedy for the fevers which prevail where tillage is imperfect, and in new and unbroken soils.

This chemical investigation has thrown an interesting light upon the testimonies borne to the efficacy of quinoidine in the treatment of fever, and the highest encomiums have been passed upon it; but the commercial specimens have differed very much in value; while some have consisted nearly altogether of amorphous quinine, others have contained only a small per centage.

It is necessary that the amorphous quinine should be separated from all admixtures and impurities, and prescribed in its pure state. There can be no doubt but the same substance will produce the same effect on the animal organism, whether exhibited in a crystaline or an amorphous state. The system, as we may say, makes no difference in such a case. As I have already observed, the mystery about quinoidine is completely solved by the discovery, that it usually contains a very large per centage of pure quinine in an amorphous state.

In a commercial point of view, it is certainly a matter of great importance that we should be able to judge by the mere external appearance of a remedy, of its purity; and consequently, how far we may rely upon its efficacy. This is thought to be the case with the crystaline sulphate of quinine, whilst the non-crystaline form of quinoidine has probably led to a disregard of the evidence for its usefulness, even more than the fact of its being, as usually sold. an admixture of various substances. But with respect to the mere amorphous form, when the quinine is separated from all its adhering impurities, it is in the same case with opium, castor, and many more of the most efficient remedies which we possess, particularly with the extracts of our pharmacopœias. It is necessary to be assured of their purity before we employ them, but their amorphous form does not prevent their use. In many of these cases, indeed, having no direct or ready way of testing them, we rely solely upon the honourable character of the merchant and dealer; but we have a completely satisfactory test for the purity of amorphous quinine. Few medicinal agents afford so ready a means of distinguishing them, and detecting admixtures, as the organic alkaloids; but if these tests are not employed, it is as easy to be deceived in purchasing crystaline sulphate of quinine, as the amorphous.

Amorphous quinine is completely soluble in dilute sulphuric acid, and in alcohol, as I have said above; it is also completely soluble in a solution of sulphate of copper, with separation of oxide of copper. And if its solution in a dilute acid yields, upon precipitation by means of ammonia, exactly the same amount of precipitate as the weight of the substance originally dissolved in the acid, there can be no doubt remaining as to the perfect purity of the sample under examination.

It only remains for me to observe, that no dependence should be placed upon the ordinary quinoidine of commerce. As I have already stated, some samples which I have seen, dissolve incompletely in water, forming a dark-brown muddy fluid; these have been probably produced by simply evaporating the mother-liquors of sulphate of quinine to dryness. They are, therefore, uncertain mixtures of various substances with sulphate of amorphous quinine, with or without excess of acid, so that in purchasing such specimens, the buyer is paying the price of an organic alkaloid for sulphuric acid, &c. The pure amorphous quinine should be separated, and it would then form a most valuable remedial agent; but the prescriber must be assured of its purity, and the test I have given will suffice for this purpose.

15. *Accumulation of Medicines in the System.*—M. Mialhe, in his *Traité de l'Art de Formuler*, makes some interesting remarks on this subject. "When," he observes, "an insoluble medicinal compound is introduced into the system, and cannot be entirely dissolved by the gastric and intestinal fluids, the insoluble portion of this body, or the insoluble whole, either traverses the entire length of the alimentary tube, to be expelled with the feces, or is arrested in its course, and lodges for a time in some of the folds of the intestinal mucous membrane. Thus the inconsiderate employment of caustic magnesia has given rise in the stomach of the gouty to extraordinary magnesian incrustation; insoluble preparations of iron, and especially the subcarbonate of the peroxyde, administered in two large doses, often occasion intestinal concretions. The accumulations may even occasionally be the direct consequence of the exhibition of too great a quantity of the medicine. But the insoluble matters thus accumulated do not all present the same dangers; those on which the vital fluids exert no effect, act on the surfaces with which they are in contact only as foreign bodies,—that is, by causing irritation and symptoms of inflammation, while matters capable of becoming soluble in consequence of a change in the quantity, or in the composition of the visceral humours, may thus become active, or often poisonous, and by their absorption give rise to severe or even fatal effects.

"It is thus that calomel, given as a purgative in large doses, occasionally causes ptyalism, and deeply affects the system: so also basic or officinal sulphate of quinine, administered in the dose of several grammes daily, though at first producing no remarkable physiological effect, has all at once given rise to symptoms of poisoning, followed by death. A few glasses of tartaric lemonade have occasioned vomiting and diarrhœa in a patient who had taken protoxide of antimony some days before, it is scarcely necessary to add from the formation of tartarized antimony. Ioduretted water, given to a patient affected with a cutaneous disease, who had a short time before been taking calomel as an alterative, has given rise to most profuse salivation, occasioned by the biniodide of mercury, resulting from the action of the ioduretted water on protochloride of mercury still remaining in the system."

MEDICAL PATHOLOGY AND THERAPEUTICS.

16. *On the Treatment of Urinary Diseases.* By John Aldridge, M. D.—It has long appeared to me a grievous error in the treatment of urinary diseases, the habit of regarding the alterations of the renal secretion in a purely chemical light. Exhibiting acids, if the urine be alkaline, and alkalies if this liquid be acid; and modifying the food, so as to diminish the chances of sugar getting into the system in cases of diabetes mellitus. These simple and most erroneous principles satisfy and guide the majority of practitioners in their treatment of urinary diseases. This error is not peculiar to the therapeutics of renal lesions: we every day see alkalies exhibited in pyrosis, not with the idea of curing the lesion of innervation, which constitutes the disease, but with the hope of neutralizing the acid secretion which is the effect. Yet, how much opposed to rational pathology is the theory upon which treatment of this kind is founded? and how ineffectual is it, usually, in the relief of those diseases to which it has been applied? You will see patients suffering from gastralgia and pyrosis, taking alkalies in large quantities for weeks

and months, without obtaining any permanent benefit: you will see patients emaciated and debilitated from chronic nephritis, or as it has been most erroneously called, the phosphatic diathesis, taking the mineral acids, for a very long period, without the urine becoming a bit less alkaline. Others, having gout or rheumatism of the kidneys, will have consumed pounds of the bicarbonates of potash and soda; during their use lithates, or crystalized lithic acid, will cease to deposit; but as soon as they intermit the employment of these salts, the uric acid, unaltered in quantity, and merely kept dissolved by the alkali, will upon the disuse of the latter precipitate in as large quantity as ever. Theory and experience equally demonstrate the inutility of the chemical treatment of urinary diseases.

Why not treat urinary diseases on the ordinary principles of therapeutics?—There are really no lesions discoverable in the various parts of the urinary apparatus, but such as you meet with in other portions of the organism. Plastic and suppurative inflammations, gout, rheumatism; alterations of nutrition, secretion, and innervation; these are all common to the different viscera of the cranium, the thorax, and the abdomen. It appears reasonable to expect, that the means experienced to be generally serviceable in a diseased condition of one organ, will be found equally beneficial in a similar disorder of another organ; and although it is certainly true that the utility of the same medicine will be found to vary according to the organ affected with a given lesion; and calomel in iritis, tartar emetic in pneumonia, turpentine in sciatica, colchicum in gout, iodide of potassium in periostitis, and opium in peritonitis, are examples of medicines which manifest an antagonism to inflammations in certain organs, much superior to what they display in other instances; still they present resemblances in their physiological and therapeutical effects sufficient to entitle them to be regarded as a distinct class of medicines; and in many cases they may be advantageously substituted for each other. Not the less, therefore, is the knowledge of the lesions of the urinary organs, and of accurate diagnosis, guides to the groups of therapeutical means amongst which you will have to select; although the determination of the particular remedies, especially serviceable in any given lesion located in some portion of the urinary apparatus, may be the specific province of experiment.

A strict adherence to system would therefore lead me to describe the treatment of urinary diseases, in the suite of their pathology and diagnosis; and if I pursue on the present occasion a different system, it is not because the pathology and diagnosis of these diseases are insufficiently developed for the purpose; for I consider that although we have much to learn with respect to the diseases of every viscus, the knowledge of urinary disorders has so rapidly progressed within the last few years, as to have now arrived, at least, to a level with other departments of medical science: but, unfortunately this knowledge is but very little diffused, among the members of the medical profession: philosophical views of the nature of disease are seldom entertained; the majority of practitioners still continue to wander through the misty regions of diathesis; and in place of looking through symptoms into lesions, are contented to rest on the superficial and sensible consequences of diseased action.

To render this lecture as generally useful as possible, I shall therefore tell you the treatment proper to each urinary indication, instead of that required by the governing lesion. And in this way, I hope to be enabled to bring together into one view, the pathology, diagnosis and appropriate treatment, in such a manner, as that each of these subjects may throw light upon the others.

Treatment of Diabetes Insipidus.—This is the name given to a symptom of urinary disease, in which an excessively increased quantity of water is habitually secreted from the kidneys, without any alteration of the solid elements of the urine. The specific gravity of this liquid, becomes consequently very much reduced. This symptom appears to depend on altered innervation, and it is best treated by the internal use of antispasmodics and mineral tonics, with the external employment of stimulating liniments to the spine.

Treatment of Lithic Acid Deposits.—These deposits are either crystaline or amorphous. When the urine for any length of time continues to deposit after each emission, the rhombic prisms of lithic or uric acid, this circumstance is an evidence that the kidney is affected with gout: under such circumstances the immediate danger is the formation of a calculus; and to obviate this it is desirable to exhibit either bicarbonate of soda or potash, in doses of ten grains or a scruple, dissolved in half a pint of water three times a day, so as to render the urine neutral or alkaline: but this effect being obtained, the practitioner ought to direct his efforts to subdue the gout which is the cause of the symptom. If the urine be albuminous or sanguinolent, and there is much pain in the loins, it shows the attack to be of an inflammatory character, and to require a treatment locally antiphlogistic: otherwise recourse may be had to colchicum, or whatever remedy the practitioner prefers in the treatment of podagra.

If the lithic acid deposit be amorphous, its precipitation may depend either upon an excessive secretion of the solid constituents of the urine, or upon a deficiency in the secretion of water. In the former case, the specific gravity of the urine becomes normally increased in proportion to its quantity: and this symptom is usually dependent on rheumatism of the kidney. The treatment should, of course, be directed to the rheumatism, at the same time it is desirable to hold the excessive lithates in solution by means of alkalies. Iodide of potassium is a medicine that fulfils both indications, and given in doses of five or ten grains three times a day, will usually be found serviceable.

When the amorphous lithates become deposited from a deficiency of water, the quantity of urine will be ascertained, upon inquiry, to be less than usual. Sometimes, however, the patient is deceived as to this point by the concentrated and stimulating secretion, demanding frequent evacuation: under all circumstances it is most desirable, for diagnosis, that the daily discharge of urine should be measured. Diminution of the watery part of the urine may be produced by irritation of the kidneys either idiopathic or symptomatic; or it may be the result of a lesion of innervation; or it may be the consequence of a vicarious watery secretion from some other organ. When the deposited lithates are of a brick-red colour, the scanty secretion of water which produces their subsidence, is the effect of the first of these causes: in that case, a fever, either essential or symptomatic, exists; and the remedies calculated to remove the fever are those fitted to increase the urinary secretion, and diminish the lithic deposit. If the deposited lithates be pale or buff-coloured, the chances are that they are caused by a nervous diminution of the watery element, connected with that weakened action of the ganglionic nervous system to which the name of dyspepsia is given; if such be the case, the internal exhibition of a scruple of alum in half a pint of water, three times a day, will soon remove the tendency to lithic acid deposit. A pink colour of the sediment is usually found in connection with an imperfect discharge of the biliary functions.

Treatment of Phosphatic Deposits.—These deposits when principally crystaline, generally depend upon the urine being deficient in acidity: in that case, the treatment will be described under the head of alkaline urine. Sometimes, when the bladder has been long diseased, a copious deposit of amorphous phosphates subsides from the urine; it is always under such circumstances accompanied with pus; and the indications which are thus afforded for treatment I shall hereafter mention.

Treatment indicated by weakly Acid, Neutral, or Alkaline Urine.—If the urine be neutral, or weakly acid, from a vice of secretion, it usually shows that the kidneys are inflamed. I have already described to you the differential diagnosis of acute nephritis, chronic nephritis, and the renal complication of typhus fever. In acute nephritis, the employment of general and local depletion, as well as the exhibition of emollients, and contra-stimulants, must be regulated by the severity of the disease, and the state of the constitution, according to the ordinary principles by which inflammations are combated: I am persuaded that I have seen much benefit from large (℈) doses of hydriodate of potash in this disease. In chronic nephritis, you will find great benefit from local depletion and counter-irritation, especially from the establishment of setons in the neighbourhood of the affected glands. In the renal complication of typhus, large blisters to the loins, and the internal administration of wine, are usually indicated; small doses of oil of turpentine will, in these cases, often increase the quantity and restore the acidity of the urine.

Treatment of the Oxalate of Lime Deposits.—Although there can be little doubt that oxalic acid is generated in the urine by the putrefactive decomposition, and often occurs subsequent to secretion, in a manner totally independent of disease, yet it is also certain that this decomposition frequently results from an essential vice of secretion. The morbid conditions which give rise to this change are not yet known; but one thing is well ascertained, that in every instance of the kind there is frequent desire to pass water, pain in passing it, and that the secretion is commonly loaded with epithelium. These phenomena proclaim the existence of irritation of the mucous membrane. Sometimes the crystals of oxalate of lime, like those of uric acid, cohere in the calyces and infundibula, forming calculi, which produce paroxysms of nephritic colic, by their descent into the bladder. In such cases, inflammation of the lining membrane may be mechanically produced; but it is doubtful whether the symptoms of mucous irritation which usually accompany the oxalate of lime deposit, are due to the irritating contact of the sharp crystals. Whatever is the cause of the mucous irritation, it constitutes the lesion which in oxalate of lime diathesis, you are especially called on to remove; and its successful treatment requires no little delicacy in the application of therapeutical agents. Unlike acute mucous inflammation, depletion and emollients will act in this irritation injuriously, if employed in the first instance; you must have recourse to tonics immediately, such as the mineral acids, vegetable bitter astringents, &c.; and having employed those means for some time, you will then find the greatest benefit from alkalies largely diluted. It will be often necessary to alternate these methods of treatment for a considerable period, but you will generally find that ultimate benefit will be derived from steady persistence in their use. The form of tonic mixture which I usually employ in these cases is the following:—℞.—Infusi Cascarillæ ℥6; Nitratis Potassæ ʒj; Acidi Nitrici diluti ʒ1½; Tincturæ opii ʒj. M. Sumat cochlearia duo ampla ter in die.

Treatment indicated by Albuminous Urine.—Mottled kidney, which is essentially an inflammation of the lining of the urinary conduits, and acute mucous inflammation, are the two principal pathological causes of albuminous urine. These diseases, according to the views which I have laid before you, are both acute inflammations, standing in the same relation to each other as croup, bronchitis of the large tubes, and capillary bronchitis. Their treatment must consequently be very similar; active depletion both local and general, the continued exhibition of nauseating doses of tartar emetic; hydragogue purgatives; warm baths; and all the resources usually had recourse to in active inflammations of internal viscera. Modern therapeutics has made no more valuable discovery than that of the utility of alkalies in cases of mucous inflammation. The diseases under consideration are particularly suited for continued alkaline medication, subsequent to the employment of more energetic agents. These means will require to be strenuously persisted in: but it is a common character of urinary inflammations, much to diminish the strength, and to deteriorate the constitution: this is particularly true of Bright's disease; and when this cachectic condition is produced, you will be forced to intermit your active antagonism to the local disease, for the purpose of obviating the still more imminent dangers resulting from an impoverished blood, and an exhausted fibre. Under such circumstances you must depend on an active counter-irritation, especially by setons, to control the urinary inflammation.

Treatment of Diabetes Mellitus.—If you agree with me in the pathology of this disease, developed in my fourth lecture, you will easily be enabled to deduce what treatment is most appropriate. I look on saccharine urine as depending on a modification of the epithelial secretion produced by an asthenic condition of the urinary conduits. If this be the case, medicines calculated to exalt the tone of the secreting capillaries, are those best fitted to restore the natural function. Accordingly, experience tells us, that the balsams, ammonia, strychnia, and other excitants, are the medicines found most beneficial, when the perspiratory secretion is suppressed; when, on the contrary, the functions of the skin continue unimpaired, much benefit is often derived from the internal use of chalybeates, alum, sulphate of zinc, or other metallic astringents. The whole system commonly shares either directly or consecutively in the debilitated condition which exists in the capillaries of the conduits, and it is therefore most desirable to employ every dietetic means calculated to increase the patient's strength. It is well, therefore, to give a moderate proportion of animal food, porter, &c., as much as is consistent with the proper exercise of the digestive functions; but from the exclusive animal regimen recommended by some, I have seen decidedly injurious results, but never any lasting benefit.

Treatment indicated by Purulent Deposits.—The urinary mucous membranes pour out pus when in a state of asthenic inflammation; and this circumstance sufficiently indicates the appropriate treatment. Tonics are the medicines chiefly to be relied on in these cases: decoction of the leaves of chimaphila corymbosa, diosma crenata, or arctystaphylos uva ursi; or of the root of cissampelos pareira; combined with mineral acids, will usually be found serviceable: chalybeates are also often of efficacy in these cases.

Treatment of Hæmaturia.—We shall therefore confine our attention to vicarious and essential hæmaturias. I have told you that the seat of vicarious hemorrhage occurring in the urinary organs, is usually the lining membrane of the bladder. These cases you treat in the usual manner that other vicarious hemorrhages are combated. The most efficacious treatment of essential hæmaturias consists in the exhibition of astringents, such as tannin, or styptics, such as oil of turpentine: the use of the latter is very apt, however, to convert the hæmaturia into a nephritis; but in this case the reaction of the urine with litmus paper affords a most accurate test, for pointing out the critical time when you should stop the exhibition of the medicine, and cup the loins.—Condensed from *Dublin Hospital Gazette*, Jan. 1, 1846.

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17. *Latent Endocarditis with large deposit of Lymph upon the Valves of the Heart.*—(*Dublin Medical Press*, April 29, 1846.)—Dr. Bellingham communicated to the Surgical Society of Ireland (April 18th, 1846) a case of extensive inflammation of the endocardium unaccompanied with any symptoms during life calculated to attract attention, and in which, although a very large deposit of lymph was found on the valves and orifices of the heart, almost every sign of obstruction to the circulation was absent.

The subject of this case was a female aged 40, admitted into St. Vincent's Hospital the last of March. She had formerly been in good circumstances, but after the death of her husband had suffered many privations. Latterly she had earned her livelihood as a visiting governess, but within the last three months she had been in a great measure confined to the house, and from this period she dated her illness, the first symptoms of which were debility and dyspnœa, followed by œdema of the lower extremities.

On admission the lower extremities were œdematous up to the knees; there was also slight effusion into the cavity of the abdomen. She complained principally of debility and of difficulty of breathing in the horizontal posture; the countenance was sallow and anæmic. She had never suffered from palpitation, cough, or pain in any part of the chest; there was little or no dyspnœa in the semi-erect posture, no lividity of the face, no paroxysms of dyspnœa; the pulse was 120, compressible, but without intermission or irregularity.

On examining the chest the apex of the heart was seen to beat in its usual situation; the action of the organ was perfectly regular, but more rapid than natural; its impulse short and abrupt, as in nervous and anæmic cases; no pulsation in the jugular veins; no unusual action in the large vessels of the neck; no increase of dulness on percussion. On auscultation the sounds of the heart were regular; no bruit de soufflet or other abnormal sound could be detected in any part of the præcordial region.

The patient died about ten days after admission into hospital, no material alteration having taken place in the symptoms.

Post-mortem examination.—The heart (which was exhibited to the meeting) was rather larger than the closed hand of the subject; when laid open, its auricles and ventricles were full of very black blood in loose coagula; there were no fibrinous clots. On removing these, and examining the mitral orifice from the left auricle, it is seen to be in a great measure closed up by a large mass of firm, white lymph, which lies against the aperture, and is strongly adherent. The mitral valve, as seen from the left ventricle, is edged with irregular masses of lymph of a similar character. Upon the right auriculo-ventricular orifice smaller masses of lymph are seen, which here have more the character of vegetations; and upon the ventricular aspect of each of the semilunar valves of the aorta a similar deposit is seen. The pulmonary valves were healthy.

Some recent effusion was found in the abdomen; the liver was larger than natural, and a section exhibited a nutmeg character. The right kidney was slightly contracted, its capsule thickened and opaque, and a section exhibited the appearance seen in an early stage of Bright's disease. The urine had been examined during life and found not to be albuminous.

Observations.—This case appears to be remarkable in two respects—first, for the very large amount of lymph deposited upon the valves of the heart; and secondly, for the almost total absence of general and physical signs. The deposit upon the valves was recent, must have taken place comparatively quickly, and ought to have caused considerable impediment to the circulation through the cavities of the heart, yet if we except dyspnœa and anasarca, no signs of any obstruction to the pulmonary or cardiac circulation were present; there was neither palpitation, cough, irregularity, nor intermission of the heart's action; the dyspnœa was little urgent, and was not apparent in the semi-erect posture—in fact, it had not at all the characters of the dyspnœa which accompanies obstructive disease of the valves, but was rather such as is seen in anæmic and nervous individuals. The action of the heart was hurried but perfectly regular, and no abnormal sound could be detected in any part of the præcordial region; the pulse also was perfectly regular.

The patient never had rheumatism, and had laboured under no acute illness previous to her admission into hospital. As there was no indication of disease in any important organ, the heart was several times examined, but the signs yielded by auscultation and percussion were only such as are exhibited by patients labouring under anæmia and debility.

The only mode of accounting for the absence of the usual signs of obstructive disease of the valves of the heart which appears to be admissible in the present case is, that the amount of blood in the system was small, and the debility under which the patient laboured prevented her from using any exertion; hence the heart's action was never excited, and its cavities were not unusually distended or overloaded with blood at any time during her residence in hospital.

Dr. H. Kennedy thought the absence of bruit in this case might be accounted for. It had been lately ascertained—and indeed the fact was stated some years ago by Dr. Elliotson—that in the advanced stages of left auriculo-ventricular contraction, the bruit which had at first existed, disappeared, in many cases at least. Now, in the present instance, the state of the parts—though the result of acute disease—was exactly analogous to what occurs in chronic disease; for this opening was all but closed by the effused lymph. As to the aortic opening it would be observed that the actual edges of the valves were free, and that the lymph deposited there was very soft; and when to all this was added the weak state the patient was in while under observation, there appeared quite enough to account for the absence of all bruit.

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18. *Enormous Hypertrophy of the Heart.*—Dr. Croker King exhibited to the Dublin Pathological Society (Dec. 6) the heart of an individual 29 years of age, which, when emptied of its contents, weighed *forty-four ounces and a half*, a weight exceeding that, it is believed, of any case hitherto recorded.

The case came under Dr. King's care three years and three months ago; the disease at that time had existed for six years and a half, and was supposed to have originated in pleuritis; however, on particular inquiry into the symptoms, Dr. King considered that the suspected pleuritis might, in fact, have been pericarditis, and this view was completely corroborated by the post-mortem examination.

On examining the chest, a dull sound was elicited over a surface extending from the second left rib downwards to the ninth, and latterly from the right of the sternum to a line falling perpendicularly from the centre of the left axilla. On applying the ear to this surface, the parietes of the chest were struck with such violence by this immense organ, that the examiner received a forcible, and, he might add, disagreeable percussion. A confused muffled sound, like that of a prolonged muscular bruit, was heard, as also a very loud double souffle, replacing the ordinary sounds of the heart, and most distinct over the origin of the aorta, which it was calculated was situated higher up than usual, in consequence of the altered position of the heart. Pulse strong, vibrating, and incompressible.

The individual was of spare habit, and had always been so; muscular system indifferently developed; skin fine and smooth; had altogether a pale, bloodless appearance.

The life of the unfortunate subject of the above affection, was rendered miserable by paroxysms of the most fearful description, the approach of which was indicated by a sensation of general nervousness, followed by a peculiarly distressing weariness of both upper and lower extremities. The heart, at all times tumultuous in its pulsations, now beat with increased violence, and the patient experienced a fearful constriction in the chest, as if the sternum and vertebral column were forcibly approximated, and a sensation as if red-hot wires extended down the arms to the extremities of the fingers; and during the continuance of the attack, though suffering from the most distressing fatigue, he was unable to sit down. The position which afforded most relief was obtained by forcibly extending the spine and raising the arms, so as to allow of the great pectoral muscles being brought into forcible action, and enabling them by acting on the ribs to diminish the sense of constriction in the chest. The paroxysm being fairly established, the appearance and position of the patient were striking, and expressed an amount of suffering which Dr. King believed to be unequaled: the head thrown back, the neck extended, the entire spine bent in a curve backwards, like an exaggerated state of opisthotonos, the arms elevated at right angles from the body, the fingers expanded and rigid, the dark and prominent eye, the marked projection of the thyroid cartilage from the forcible extension of the neck; the violent action of the heart absolutely causing the individual to vibrate at each pulsation; the carotids bounding and throwing forward the integuments of the neck; the violent distension of the superficial arterial branches, enabling their course to be traced; in fact, so general was the arterial dilatation, that at each beat of this powerful heart, the individual appeared to undergo a general enlargement, and thus to resemble one enormous aneurism.

Coupling with the above, the expression of the patient's countenance, the suppressed breath, the perspiration, which, at first, stood in large drops on, and ran down the face and neck, the whole embodied a scene which *might* possibly be depicted with the pencil, but defies the pen.

These paroxysms were induced by the slightest circumstance; a cause which from its unimportance, could scarcely be considered capable of producing the slightest mental disturbance, being capable of giving rise to them. Such as receiving a visit from even his most intimate friend; at one time drinking, at another eating, appeared to be an exciting cause; and so much did this unfortunate gentleman dread the occurrence of a paroxysm, that I have known him to remain for several days without food, dreading the consequence of taking it. The paroxysms could frequently be warded off by occupying his mind, with any circumstance calculated to fix his attention; and over and over again have I succeeded in doing so by such a stratagem.

All through this case the most marked relief was experienced from stimulants; narcotics and antispasmodics: whereas any treatment calculated to reduce or depress was injurious, and appeared to favour the frequent recurrence of the attacks. So great was the relief experienced by the patient from the use of stimulants, that some years ago, without any pleasure in intemperance, or wish to indulge in intoxicating liquids, he gradually increased his potations to 16 or 18 tumblers of punch daily: however, he soon became sensible of the injurious effects of so much alcohol on the system: an attack of delirium tremens determined him to abandon such habits at all risks. He accordingly substituted opium, the dose of which he was equally anxious to limit, which, with some exertion, he kept down to one ounce and a half of the tincture daily; the other preparations, the acetum, black drops, or the salts of morphia, had not the same effect as the laudanum; the doses should be larger in proportion, and even then, on account of the absence of the spirit, they were not as efficacious.

It is worthy of remark that during the entire progress of the above case, there was no evidence of interrupted circulation, *no dyspnœa*, no venous nor capillary congestion: anasarca certainly set in towards the close of the case; it had not extended above the hips.

This individual was found dead in his bed a few mornings ago; he was seen alive an hour before; did not make any complaint, but, on the contrary, stated that he had passed a good night. The autopsy did not reveal the immediate cause of death, which K. attributes to syncope; it had evidently been very sudden; *the body* was found in the position he usually adopted during sleep; the clothes were not in the least disturbed.

In the progress of the above case a variety of symptoms of the highest interest were manifested; but as the details of the case have already occupied more time than he intended, Dr. King would conclude by merely drawing attention to the pathological specimen on the table.

The heart, taken as a whole, has attained an unusual size, partly owing to dilatation of its cavities, but, principally, from hypertrophy of its substance—auricles normal—the right ventricle is dilated, the walls do not appear to be hypertrophied—the left ventricle is much dilated, its walls hypertrophied—a similar change has taken place in the septum ventricularum—the aortic valves are the seat of cretaceous deposit which almost entirely fills up their concavities, and in one instance has penetrated the substance of the valve and formed an attachment to the adjoining mitral valve: the aortic opening is, however, perfectly free—the blood enjoyed uninterrupted egress from the heart: pericardium universally adherent to the surface of the heart by adhesions, fibrous, and evidently of long standing. In the situation where the serous layer is reflected from the heart on the great vessels, it was lifted up by a subserous effusion of the depth of half an inch.—*Dublin Hospital Gaz.*, Jan. 1, 1846.

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19. *Slow Pulse from Cardiac Disease.*—Dr. Stokes exhibited to the Pathological Society of Dublin (Dec. 6, 1845), a specimen which he remarked was calculated to throw some light on the symptom of slow pulse. The society was aware, that until lately, this symptom was considered as dependent upon cerebral disease; but the progress of pathological science had latterly demonstrated that slowness of the pulse frequently resulted from cardiac lesions.

The patient who manifested the symptom referred to on the present occasion, entered the Meath Hospital some months ago, suffering from general debility, cough, and dyspnœa, but without any suspicion that he was labouring under an affection of the heart. He did not complain of cardiac pain or palpitation; and it was only the character of his pulse which drew attention to the central organ of the circulation. The pulse beat steadily between 35 and 40 in the minute. He presented no cerebral symptoms whatever; and it was principally for the purpose of observing the peculiarity of his pulse, that he was retained in hospital. He exhibited the yellowish anemic appearance of senile phthisis; and gradually sunk.

Dr. Stokes was enabled to report the cardiac phenomena which accompanied this remarkable slowness of the pulse. There was an increased extent of dullness; and upon applying the stethoscope, a bruit could be heard precisely analogous to that usually ascribed to mitral regurgitation: but this bruit became more audible upon ascending the sternum, until it became loudest just at the junction of the cartilage of the second rib, with the sternum on the right side. This latter character seemed to indicate aortic valve disease; but then the bruit was confined to the first sound, the second sound being distinct and defined On the whole, Dr. Stokes was inclined to regard it as a case of mitral valve disease, and to account for the aortic bruit by the anemic condition of the patient.

The autopsy developed that the valves affected were really the aortic; the mitral valves were perfectly normal. But the lesion of the aortic valves did not permi of regurgitation; water poured into the aorta was perfectly retained; the disease consisted in a considerable narrowing of the orifice; the lining membrane of the artery was also to a slight extent diseased. The heart itself was soft and flabby it could not be called a fatty heart, but evidently contained a greater quantity o fat than usual; it was manifestly a weakened heart.

In the disease of the aortic valves, so well described by Dr. Corrigan, an aorta bruit exists in the second sound; the present was a disease of the aortic valves but without any bruit replacing the second sound: but there was in this case no regurgitation; so that we may modify the diagnosis of aortic valve disease in the following manner:—When in organic lesions of the semilunar valves of the lef side of the heart, regurgitation is not permitted, there may be a bruit confined to the first sound.

Mr. Adams, in a paper published in the fourth volume of the Dublin Hospital Reports, mentions that slow pulse often accompanies fatty degeneration of the heart. In the weak and softened heart of typhus fever, first described by Dr. Stokes, the pulse is not uncommonly very unfrequent. But weak heart does not always produce slow pulse; in the debilitated condition which frequently follows inflammation of the organ, the pulse is usually very frequent. In fact we may lay it down as a pathological law, that when irritation accompanies a weak state of this muscle, the pulse is frequent and feeble; while a feeble heart produces a slow pulse.

Dr Adams states in the paper alluded to, that patients affected with fatty heart, are especially liable to apoplectic attacks, not followed by paralysis; a form of apoplexy which Dr. Stokes believes seldom to occur under other circumstances. There was nothing of the kind, however, in the present case; and it was an instance of slow pulse, unconnected with any cerebral disease, and manifestly depending upon cardiac lesions, that he regarded it as principally interesting.—*Ibid.*

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20. *On the Curative Medication of Intermittent Fever.* By M. BRETONNEAU.—A sort of drunkenness, more or less painful, produced by a single and suitable dose of sulphate of quinine, repeated, if necessary, two days afterwards, suppresses for eight days *simple* intermittent fever.

In the same way, that with a person who is in the habit of intoxication, we find that much wine may be taken without producing this condition; so we every day see individuals affected with ague taking great quantities of quinine, without the fever becoming suppressed, or its return being prevented.

M. Bretonneau agrees with the Jesuits who first imported cinchona, and learned how to adminisier it; and with Torti, who for thirty years practised in the hospital at Tours, that every sufficient dose of bark loses its febrifuge power by fractioning it, exactly as a dose of wine loses its intoxicating property by being divided.

It has been stated that the prolonged administration of many doses, whose sum altogether amounted to several efficient doses, has completely failed. M. Bretonneau has seen a quartan fever, which had resisted two ounces of bark, yield to two drachms of the same medicine; but the two drachms were given at once, while the two ounces were taken in very small quantities at a time, and during fifteen days.

Small doses, which habituate a patient to the action of cinchona, injure the beneficial results of adequate doses; they hurt the digestive apparatus, and render the febrifuge intoxication more difficult to obtain.

M. Bretonneau corroborates the statements of Sydenham and Morton—that the dose of bark which has suppressed a paroxysm, if repeated before the supposed epoch of its return, will prevent it; and moreover, that the immunity thus procured may be prolonged by renewed doses exhibited at gradually lengthened intervals, until a permanent immunity from relapse becomes established. The progression recommended in the giving of these preservative doses is the following:—A second dose equal to that which suppressed the fever is to be exhibited, according to the nature of the fever, on any day from the first to the sixth interval, then to be repeated after intervals of 7, 8, 9, 10, 12, 14, 16, 18, 22, 30 days. The best time for giving each preservative dose is immediately after a light dinner; and the first dose had better be given shortly after the decline of the suppressed access, so as to be as distant as possible from the next threatened paroxysm. A relapse will render it necessary to renew the treatment from the commencement. The preservative doses should be approximated if it is found that the accesses become more frequent.

Unusual exercise, the prolonged impression of cold, indigestion, purging, &c., provoke the return of the fever which ordinarily, with the precautions indicated, does not return till spring. Occasionally, at Tours, the fever which had been suppressed, but its relapse not guarded against by the preservative treatment mentioned above, was accustomed to become renewed during twenty or thirty months.

M. Bretonneau has observed that an adequate dose of sulphate of quinine commonly produces vertigo and noises in the ears; subsequently, at a period more or less elongated from the first effect, there frequently supervenes a febrile state which there is danger of confounding with a return of the intermittent fever. This sort of fever is of good augury. During its continuance the skin is hot, the pulse elevated, and this state corresponds to that condition of febrile reaction which it is so very erroneous to dread in paludial affections. With extreme sagacity, Dr. Bally discovered, in 1821, that in Paris agues became developed in the spring, in subjects who had spent the autumn in localities where the fever prevailed. Evidence the most irrefragable bore out this assertion, nothing similar having been observed in persons who had not left Paris. M. Bretonneau has found, that a fever developed under these circumstances has all the tenacity of the kind prevalent in the district where it was contracted.

From fifteen to twenty grains of the sulphate of quinine, or from three to four drachms of good cinchona, suffice to suppress the fever of an adult, and to keep it suppressed during eight or nine days. Many reasons lead to the belief, that it is useful that the necessary dose should not be exceeded.

Intermittent fever is endemic in the locality where these observations have been a multitude of times repeated; and the number of fever patients admitted into the hospital has been so great, that in this establishment, previously to the discovery of quinine, 1200 lbs. of cinchona have been prescribed in the course of ten years, and since that discovery, frequently 50 oz. of sulphate of quinine have been prescribed in the pharmacy during the three months of autumn.

If a serious and unusual symptom shows itself for the second time in the course of a fever, whose paroxysms have been in general but little marked; if a lethargic torpor, faintings, alvine evacuations, either bilious, or like the washings of flesh, or melanic; if a severe epigastric pain, a superabundant sweat, a marble coldness, shiverings, symptoms exceeding an ordinary severity, accompanied by prostration, nearly complete abolition of the pulse; if these symptoms become developed, and prolong the paroxysm beyond the previous term of its duration, the dose should be doubled and given before the complete decline of the paroxysm—the fever has now become *pernicious*. It is necessary to guard this large dose with a third of a grain of watery extract of opium, or four or five drops of wine of opium. If tolerance on the part of the stomach cannot be obtained, it will be necessary to inject the febrifuge into the rectum. The intestinal injection is most easily retained if it produces neither a sensation of heat nor cold, if it is deposited above the second sphincter—a region less excitable than that which is below it, if it is small in bulk (from three to four ounces), and if made to traverse a large pipe slowly a mixture of two drachms of powdered cinchona and a scruple of sulphate o quinine is more easily retained than a solution of half a drachm of sulphate o quinine.

A moderately abundant and substantial diet aids powerfully the good succes of preservative treatment. This is what Sydenham and Morton. one hundred an fifty years ago, expressly affirmed.—*Dublin Hospital Gaz.*, Dec. 1, 1845, fro *Journ. de Méd.*, par Trousseau, March, 1845.

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21. *On the abuse of Alkaline Remedies.* By Prof. Trousseau. (*Journ. de Méd.* March, 1846.)—The object of this paper is to caution practitioners against the abus of alkalies. These remedies exercise an immense influence on the economy. I by their use the alkaline state of the blood is increased, all the secretions fro that fluid are modified. The secretions which are naturally alkaline will becom more so, those which are neuter will become alkaline, and those which are aci will become either less acid, or more or less alkaline. The presence of acid being one of the conditions for the digestion of food in the stomach, it cannot be matter of indifference to neutralize the acids which the economy wants—for th transformation of fecula into glucose, for instance. The digestion of amylaceou substances becomes, therefore, incomplete, or extra-natural, if we may use th expression. The presence, also, of alkalies in the blood in due proportion, give to this liquid the means of burning, to a certain extent, the carbonaceous element absorbed in the process of digestion. An imperfect combustion gives rise, with out doubt, to morbid symptoms; but a too great or too rapid combustion, on th

other hand, is not the less attended with inconvenience, as it gives rise to important mutations in the composition of the blood, and consecutively in the texture of the organs.

It is, therefore, under no circumstance, of unimportance to administer alkalies. Taken without any real indication for a few days, they only give rise to momentary disturbance; but taken in large quantity, they occasion a cachectic condition, followed by a deplorable state of emaciation. The ancients have admirably indicated the influence of alkalies on the composition of the blood: they had remarked, that it became more fluid, being paler than in the normal state; and that at last a cachexia became established, characterized by paleness, general puffiness of the tissues, and passive hemorrhage; moreover, they had also perceived that these symptoms were followed by emaciation. Within the last few years, the abuse which has been made of the mineral waters of Vichy and Carlsbad, in the treatment of gout, has proved the above fact. The abuse of alkalies has certainly done more harm than that of iodine.

How is it that physicians do not see that a remedy powerful to cure is also powerful to do evil? Alkaline remedies are daily administered with inconceivable indifference. A physician prescribes to a patient one or two months' use of the waters of Vichy, Carlsbad, or Ems, as he would barley-water to drink. Is it a matter of so little importance to change all the secretions of the economy? Other alterative medicines are wielded with more prudence. Mercury and iodine, for instance, are administered with care and precaution, because the danger which attends their use is known.

In conclusion, Prof. T. unhesitatingly states that the danger of alkalies is greater than that of mercurials, because the danger is less suspected, and that their administration is often only arrested when the health of the patient has been irreparably destroyed. This is not so often the case with mercurials, because the experience of three centuries has told us that mercury could not be taken long with impunity. It behoves us, therefore, to make generally known, both the immense utility and the extreme danger of alkaline remedies.

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22. *New Method of employing Muriate of Morphia for Neuralgia and Toothache.*—Dr. **Ebrard**, of Bourg, has employed with striking success in the cure of toothache, the muriate of morphia, in frictions, to the gum of the painful part. These frictions are made in the following manner:—

During the paroxysm, or in the evening, some hours after a meal, the patient should take upon the moistened extremity of his finger 13 milligrammes (one-fifth of a grain) of the muriate, and apply it for two or three minutes to that portion of the gum which is painful. Then, while inclining the head on that side, taking care not to swallow or eject the saliva, which holds the salt of morphia dissolved, he must allow free contact to take place between the saliva and the gum for five or ten minutes: this leads to the local absorption of the morphia. He may afterwards swallow the whole of the saliva. If there should be no relief, and symptoms of narcotism be absent after a period of two hours, the application may be repeated. This repetition, however, is rarely required.

If the toothache should reappear the day following, without any abatement of the suffering, and no symptom of narcotism be present, the patient may employ 37 milligrammes of the muriate (about $\frac{57}{100}$, or one-half of a grain English) in two doses, with the same precautions, allowing an interval of about two hours to elapse between each dose. M. Ebrard has reported cases in which one or two applications of the muriate, in this way, sufficed to remove the toothache entirely, whether it depended on caries or simple neuralgia, without any alteration in the tooth.

In neuralgia affecting the forehead, he has found a most successful method of treatment to be that of causing the patient to take, like a pinch of snuff, from 25 to 50 milligrammes ($\frac{4}{10}$ to $\frac{3}{4}$ of a grain) of muriate of morphia. Simple as this mode of treatment is, Dr. Ebrard properly advises that great caution should be used in employing this powerful agent.—*Gaz. des Hôpitaux*, Jan., 1846.

It is proper that we should inculcate great caution in the use of this salt, which sometimes produces unexpected effects in small doses. One-fifteenth part of a grain in two doses, applied endermically, has caused most alarming symptoms in an adult female, and half a grain has produced dangerous effects. On nc account should the dose be repeated if there be the least sign of narcotism.

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23. *Rheumatic Paralysis in Nurses.* By M. TROUSSEAU.—Women when nursing are subject to a kind of rheumatic paralysis. They complain of stiffness and numbness, with painful tension, in the superior limbs; the muscles of the forearms presenting a kind of tonic spasm. They cannot bend the arm without difficulty, and the object which they touch merely occasions a confused sensation. This form of paralysis deserves the name of rheumatic, from its great mobility. I leaves the arms to attack the legs, and when this is the case, the patient is obliged to look where she puts her foot in walking, as she does not feel the soil. When the legs become free the head is attacked. The patient has noises in her ears, swimming of the head, and stiffness of the jaws. The affection will then again leave the head to attack the upper limbs and so on. This malady easily gives way to bleeding from the arm, assisted by a few purgatives. What is singular is, that the blood presents the inflammatory buff without there being any appreciable febrile state.—*La Clinique des Hôpitaux des Enfans*, Jan. 1846.

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24. *Glycerine in Squamous Eruptions.*—Mr. STARTIN in a clinical lecture (*Med Times*, Feb. 8th, 1846,) introduces to the notice of the profession a new remedy for the cure of certain cutaneous diseases. This article is the glycerine, a substance first observed by Scheele, and which, though known for 60 or 70 years, had not been tried as a therapeutic agent until used by Mr. Startin. Its usefulness depends most probably on its property of resisting evaporation, even at a considerable temperature. Mr. Startin says that a common plate wetted with it may be kept in an oven, side by side with a joint of meat, till the meat is cooked, without any sensible diminution in the quantity of the liquid. Hence, when applied to the skin, it remains moist, forming a coating or varnish, not distinguishable from the ordinary secretion of the part. A lotion composed of half an ounce with ten ounces of water, effectually prevents the skin from becoming dry. When used pure, it makes the part stiff and uncomfortable, so it answers best diluted. It is also added with advantage to poultices, and even to baths. Mr. Startin speaks o its use chiefly in Psoriasis, Pityriasis, Lepra, and Ichthyosis, in all which he describes it as producing excellent palliative effects.

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25. *On the Efficacy of large Purgative Clysters in certain forms of Obstinate Constipation of the Bowels,—together with a Series of Experiments upon Living and Dead Bodies, undertaken to determine the extent to which fluids may per annum, be injected into the Intestines.* By ALFRED HALL, M. D. (*Month. Journ. Med. and Surg.*, Jan 1846.)—The object of the author of this paper is to illustrate the efficacy of large injections,—from two to three quarts,—for the relief of obstinate constipation He relates two cases in which the constipation had persisted for ten days and had resisted ordinary injections and the other usual means, promptly relieved by the injection of five pints of well boiled oatmeal gruel with butter and common salt Some physicians being incredulous of the possibility of injecting fluids throughou the whole course of the large bowels. Dr. Hall instituted some experiments which demonstrate that fluids may be forced through the ileo-cœcal valve in the dead body, and in one case it seems to have been accomplished in the living Dr. Hall properly insists upon these injections being administered by the medica attendants and in a slow manner, twenty minutes or longer being occupied in the injection of the quantity recommended.

We have, ourselves, been in the habit for many years of resorting to these large injections in certain cases of obstinate constipation and severe colic, and we can from sufficient experience, confirm all that Dr. Hall has said of the value of this therapeutic means.

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26. *Croton Oil in Delirium Tremens.*—Dr. PRANKERD recommends (*Prov. Med and Surg. Journal*, April 29, 1846,) croton oil as a remedy for delirium tremens and relates a case treated by him with it. Twelve drops of the medicine was given in less than twenty hours, and Dr. P. thinks with decided relief. He is o

opinion that the medicine acts in these cases as a direct sedative to the nervous system.

27. *Hydrate of Lime in Diarrhœa.*—Simple syrup, saturated with hydrate of lime, has been employed by Dr. Capitaine as an antacid, in doses of from one scruple to half a drachm; and at the hospital Neckar, it has been given with much benefit instead of cow's milk in the diarrhœa of children.

28. *Thoracic Percussion.*—M. Lanza, Prof. Clinical Medicine, at Naples, lately read to the Scientific Congress a paper on thoracic percussion, in which he endeavoured to determine the normal sounds produced by percussion in the human chest, more exactly than had been hitherto attempted. The results at which he arrived are, that the sounds vary, in the normal state, according to the constitution of the individual, and more especially according to the natural tone of their voice, which has an intimate connection with the state of the thoracic organs. Thus, for instance, in three healthy individuals, of whom the one has a *tenor* voice, the other a *bass*, and the third a *baritone*, it may be certainly assumed that percussion will yield a different result in each. In the first, the sound will be similar to that produced in striking a perfectly empty cask; in the second, the sound will be more masked, as if striking a cask filled with raw silk or cotton; in the third, the sound will be a mean between the two former, and the more his voice approaches to the acute tone, percussion will bring out a sound, at the summit of the chest, having a character approaching to that of the tenor. If, on the other hand, the voice has an inclination towards the bass, then the base of the thorax will yield the loudest sound on percussion. So that an individual being given, M. Lanza, without hearing him either speak or sing, can, by the sound elicited by percussion, predict the tone, quality, and extent of his voice. M. Lanza has made an immense number of experiments on this interesting question, the clinical application of which is easily foreseen; for if it be true, that the normal sound of the chest varies according to the original form of the tissues, that is to say, according to the constitution, then the anormal sounds elicited by percussion must, in order to appreciate the differences, be judged of relatively to the *type* of the individual. From all this it follows, that there is at least reason to examine anew the opinions at present received regarding percussion, in the study of diseases of the chest.—*Annales de Thérap.*, Dec., 1845.

29. *Arsenic in Intermittent Fever.*—M. Boudin, chief physician to the military hospital of Versailles, addressed to the Academy of Medicine, of Paris, (August 2d, 1845,) a communication relative to the administration of arsenic for the cure of intermittent fevers. M. Boudin states that after having taken himself arsenic in a therapeutic dose for a long time, and having thus proved its safety, he administered this substance to nearly 3000 patients labouring under intermittent fever. The greater number of these patients had previously taken quinine without benefit, and some of them had taken it in large doses. All these patients indiscriminately and without selection, took the arsenious acid. They had contracted the fever in all parts of the world, in Senegal, in Algiers, in America, in Italy, in France, in Syria, &c. They have been treated in the presence of many physicians, who have carefully watched the experiments, so that the mode of treatment by arsenic has thus stood the proof of time, place, number of patients and even of a number of physicians. The success, he asserts, has been almost constant; the duration of the treatment very short, and relapses extremely rare. As to ill effects, none have occurred which could be attributed to the use of this medicine.

M. Boudin, taught by long experience, has abandoned the use of the arseniates. He gives the arsenic acid, in solution, in the following formula—℞.—Acid. arsenic, 5 centigr., (gr. j): Aq. distill., 500 gram., (℔j). He gives 100 grammes of this solution, or one-fifth of a French grain of the arsenious acid, as a medium dose. This he administers three hours before the expected paroxysm. In cases where the fever is very obstinate, he triples the dose, but gives it in three doses, at intervals of two hours between each, the first to be taken seven hours before the expected paroxysm.

He usually continues the medicine in smaller doses eight or ten days after the cessation of the paroxysms.

M. B. finally notices and refutes the various objections which have been made to the use of this medicine. *Journ. de Med. et de Chirurg.-Pratiques*, Oct., 1845, and *Revue Méd.*, Sept., 1845.

These statements of M. Boudin seem to be altogether full and conclusive as to the superior efficacy of arsenic in the cure of intermittent fever; and to the young practitioner, at least, the point will appear to be incontrovertibly settled. Unhappily such a sweeping conclusion, as every practitioner of large experience will perhaps anticipate, is not well founded. Our own experience has certainly satisfied us that such is the fact, and we find in the *Journal de Médecine de Bordeaux* some cases, collected by Dr. Henry Gintrac, which are little favourable to use of the remedy, and as they were observed in the service of his father, Prof. Gintrac, a practitioner well known for his skill in observation, they are entitled to all confidence.

Dr. Gintrac states that in the summer of 1842 Prof. Gintrac treated 33 cases of intermittent fever with arsenic, according to the method of M. Boudin. These cases were carefully watched, notes of them kept; it was ascertained that the medicine was regularly taken, nevertheless 6 cases only were cured.

The report made by M. Boudin to the Academy of Medicine, of his extensive trials and extraordinary success with arsenic induced Prof. Gintrac to repeat his experiments, and in September last he tried the remedy in 33 cases, following strictly the mode of administration recommended by M. Boudin. The following are the results, 1. Six patients were promptly and entirely cured. 2. In seven cases a remarkable modification of the fever was induced; the three stages were no longer distinct, the cold stage disappeared, but there remained a continued febrile condition, with a pulse of from 90 to 100, and warm skin; nevertheless this condition was relieved by hygienic measures alone, except in one individual who became anasarcous. 3. In four cases the paroxysm, after having ceased, recurred in a few days, and required the sulphate of quinine. 4. Finally, in sixteen patients the arsenic produced no sensible effect, and it was necessary to have recourse to the sulphate of quinine to effect a cure.

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30. *Treatment of Painter's Colic.*—An interesting memoir on this subject was read to the French Academy of Medicine, by M. Sandras, on the 26th of August last. In 1843 this physician, in conjunction with M. Bouchardat, proposed the moist hydrated persulphuret of iron as an antidote to corrosive sublimate, lead, copper, and arsenic. These physicians have since tried the same substance to remedy the ill effects developed by the preparations of lead, effects so common and severe, and for which such a host of remedies has been employed.

The persulphuret of iron is prepared by pouring, drop by drop, a neutral solution of sulphuret of iron into a solution of sulphuret of potassium. A blackish, gelatinous precipitate is formed, which is deprived of the excess of sulphuret of potassium, which washing and decanting, it is to be preserved under water in a well closed bottle.

The following is the plan of treatment for lead colic adopted by M. Sandras. The patient is first placed in a bath and thoroughly washed with soap to remove all the particles of lead which may adhere to the skin. Croton oil, castor oil, or some other purgative is then given him; and if it does not operate well it is to be followed by purgative injections. Lemonade is given to drink, and at night a dose of the aqueous extract of opium is administered to induce sleep and quiet the cramps. Finally, on the second or third day the patient is given, morning and evening, a tablespoonful of the persulphuret of iron, which is continued until the cure is completed.

Within a year M. S. has treated in this way 54 patients, all of whom were cured except one, and he died from typhus fever. Under this treatment he has never found the disease to persist and become chronic and terminate in paralysis. From physiological experiments, theory, and practical experience, MM. B. and S. recommend this mode of treatment as curative, and as the best prophylactic. *Journ. de Med. and de Chirurg. Prat.*, Oct., 1845, and *Rev. Med.*, Sept., 1845.

31. *Efficacy of Mercurial Frictions in Small-pox.*—Dr. Goblin in an article published in the *Journ. des Connaissances Médicales Pratiques* (Oct. 1845,) states that he employed frictions with mercurial ointment with success in the treatment of variola, during an epidemic which prevailed at Stains. Under this application, he says the pustules which commenced to form, were immediately arrested in their progress: when the pustules had become lenticular and red, they dried up and desquamated leaving only a slight reddish elevation, and finally when the pustules were about becoming confluent, they contracted from the circumference towards the centre, dried up, and after the crusts fell off, there remained only slight cicatrices which disappeared after the skin resumed its natural elasticity.

32. *Rheumatism cured by Frictions with an Ointment of Ioduret of Potassium.*—M. Ebrard has employed with great advantage frictions with an ointment of hydriodate of potassium, in the treatment of rheumatism, and especially of lumbago. The ointment is composed of four parts ioduret of potassium, and thirty parts of lard. A case is related in which five drachms of this ointment employed in three prolonged frictions at two hours interval, completely cured the patient.—*Journ. de Méd. et de Chirurg. Pratiques,* Nov. 1845, from *Journal de Médecine de Lyon.*

33. *Apoplexy in the Fœtus and New-Born Child.*—M. Lasserre has lately shown that the fœtus and new-born child are subject to cerebral hemorrhage like individuals who are more advanced in life. The effusion presents exactly the same anatomical characters. The first case which he observed was one of meningeal apoplexy, in which there were nearly one hundred grains of viscid blood effused into the cavity of the tunica arachnoides. The child was mature, and was born dead. M. Lasserre ascribed the effusion to pressure on the cord during labour, whereby the utero-fœtal circulation became interrupted. In the second case, effusion had taken place into the ventricles. The fœtus had reached five months and a half, and was born in a putrefied state. The blood, which filled the whole of the four ventricles, was in smooth, polished, irregular, but moderately firm coagula. In a third case, apoplectic effusion had occurred in the posterior part of the left hemisphere in a new-born child. This was followed by encephalo-meningitis. M. Lasserre concludes from the facts which have fallen under his observation, that cerebral apoplexy does not give rise to the same symptoms or produce the same functional disorder in the new-born child, as in the adult. In his opinion, also, it is not so speedily fatal.—*Lond. Med. Gaz.,* Feb. 1846, from *Journ. de Med. de Toulouse.*

34. *Cephalæmatoma Neonatorum.*—In a private practice extending over the long period of twenty-six years, Dr. Doepp has observed this remarkable affection only thrice, while in the foundling hospital, during the space of eleven years, it has occurred in not less than 262 cases, and in all excepting two, the parietal bones, near their superior portion, were the seat of the disease. The average amount of cases was 1 in 190 of the whole children in the hospital: 11 post-mortem examinations were made, including 8 who died of other disorders when thus affected. The results of the dissections were the following:

a. In none of the 11 cases was any perforation of the skull observed, nor any effusion of blood upon the inner surface thereof.

b. All the 262 patients were brought to the hospital with the affection already existing, though many were not above a few hours old. But the tumour was often observed to increase in size after the arrival of the children at the hospital, at least during the first three days, after which no further enlargement took place, except in those cases were the tumour having been opened had again become distended.

c. It was only in nine cases of the whole number that Dr. Doepp could ascertain the nature of the labour. All the nine had been easy and every way natural, and the mothers were strong, healthy, and not overburdened with fat. Three were primiparæ; the previous children of the other eight had been perfectly free from any signs of this affection.

d. The cephalæmatoma seemed to be always beneath and separate from the scalp; it was a *tense* fluctuating tumour; the integuments were of normal colour, and could, even in the most distended condition of the swelling, be freely moved backwards and forwards over its surface. The pulsation noticed by Naegele and others was never observed, nor did pressure on the tumour seem to cause pain to the infant. Its form was usually oval, but was sometimes altered by two or three tumours being placed in close apposition. The largest tumour that was observed in the hospital measured about four inches by three, and several were seen not larger than a hazelnut.

e. The hard ring around the tumour was never wanting, though at an early period of the affection it was less observable than afterwards. It was *most distinct* whenever the tumour was emptied by incision, and gradually disappeared then in about five days' time. Dr. Doepp carefully dissected two cases for the express purpose of ascertaining the true nature of this callous ring. After removing the external integuments, he found that the tumour was formed by the pericranium distended with blood. Upon incising the swelling and washing out the contents, he observed the callous ring to consist *solely* of a layer of coagulated blood, which formed all round at the point where the pericranium had been upraised from the bone. By a continuous stream of water this layer could be dissolved away, and with it the callous ring entirely disappeared. The pericranium was everywhere healthy, as was also the bone beneath. No appearances of inflammation could be detected in either.

Dr. Doepp does not, however, deny that, in certain cases when the tumour has been opened, and much suppuration has ensued, the bone may become carious, and thereby the exterior table of the skull with the diplöe may be destroyed. In such instances the circumference of the carious portion would necessarily present a sharp unyielding edge. In one skull in Dr. Doepp's possession the absorption of the diplöe appears to have commenced first, and the external table over the absorbed portion was depressed in the centre, but elevated at its circumference, so as to form a callous ring of true bone. The termination of this affection was almost always favourable. Two children died out of 265, and one of these from violent phrenitis, perhaps occasioned by cauterizing the interior of the tumour with nitrate of silver. The cause of cephalæmatoma, Dr. Doepp confesses himself unable to explain, and he is quite dissatisfied with all theories hitherto promulgated.

The treatment appears to have been simple and sensible. Fomentations were applied at first, but if no disposition to absorption manifested itself before the end of the second week the tumour was opened by a small incision, four or five lines in length, and the extravasated blood was pressed out. The fear of hemorrhage, so dangerous to a new-born weakly child, deterred Dr. Doepp from emptying the tumour at an early period, and he recommends that the operation, on the other hand, should not be delayed beyond the fortnight, as absorption of the bone will then probably commence.—*Brit. and For. Med. Rev.*, April 1846, from *St. Petersburg Med. Transactions*, vol. vi.

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35. *On the Periodic Nocturnal Cough of Children.* By Dr. Behrend, of Berlin.—This cough of little severity, but rather frequent and of a peculiar character, has not as yet been described by any author.

Symptoms.—This cough is most generally observed in spring-time and winter, but also frequently in autumn, rarely in summer; it seldom, if ever, occurs in children at nurse, but is observed in other children at all ages, and more frequently in boys than girls. During the day there is no cough, not even the vestige of catarrh, and, when put to bed, the child falls asleep quietly at the usual hour; but in the course of a few hours it becomes restless, and coughs violently before awakening; it commences to cry, and the cough becomes more and more severe, till, in some cases, it produces vomiting: after one or two hours of suffering the child again falls asleep, and passes the rest of the night quietly. The cough returns at the same hour the following night, and continues sometimes for weeks and months; at last it commences to diminish, and disappears completely and spontaneously: the fits become shorter in duration, and occur at a more advanced period of the night, so that the length of sleep enjoyed previous to its occurrence is gradually prolonged. The children are pale, easily fatigued, and troubled with cold feet towards evening; they take their food, and play, however, as usual, and appear otherwise to enjoy good health. The nocturnal cough has frequently a catarrhal character, and is generally accompanied with mucous rattle; sometimes, however, it is dry, croupy, and whistling: the kinks are short, isolated and uniform, and may recur every five minutes, or extend only to one or two.

Diagnosis.—This periodic cough can neither be mistaken for croup, which has well-marked symptoms, nor for hooping-cough. The latter is almost always epidemic, and occurs as much during the day as during the night, and is always remarkable from a peculiar dyspnœa. In the periodic cough there is no true appearance of suffocation: the children do not awake suddenly, as in a fit of asthma or spasm of the glottis, but they awake slowly, after having coughed several times during sleep. It most nearly resembles catarrh or bronchitis, but is distinguished from these affections by the complete absence of physical signs, and by the nocturnal periodicity of the fits, followed by complete remission.

Etiology.—The author regards this cough as dependent on an affection of the nerves, perhaps the vagus, and grounds his reason chiefly on the symptoms, and on the circumstance that it has frequently appeared after an epidemic of hooping-cough, and whilst intermittent fevers were very prevalent among adults. This last remark has been made by several other medical men, whose attention was drawn to this cough by M. Behrend.

The prognosis is always favourable. In one case the periodic cough was followed by bronchitis; but this was probably merely accidental. In another case there was frequent epistaxis.

Treatment.—The disease is generally more troublesome than serious, and requires no active treatment. Gentle purgatives, such as manna, with tincture of rhubarb, given in the evening, and attention to diet, are to be recommended. A drachm or two of mindererus, in a little sugar and water, may also be given before putting the child to bed. One medical man found small doses of quinine, given at bedtime, of great service; another found slight irritation of the skin, chiefly by means of pediluvia, and friction of the soles of the feet with roasted onions, and even enveloping the limbs after the manner of Preissnitz, beneficial.—*Month. Journ. Med Sci.*, May 1846, from *Gaz. Med. and Journal der Kinderkrankheiten.*

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

36. *Erysipelas of the Head.* By M. Chomel. (*Annales de Thérapeutique*, Jan. 1846.)—This disease, Dr. Rognetta states prevails at the present time in many of the Paris hospitals, and of so severe a character as to merit the attention of practitioners. The disease attacks sometimes the face, sometimes the scalp, and passes from one of these parts to the other. Young females are most liable to be affected. In one of M. Chomel's wards at the Hôtel Dieu, there are several of these cases; it is also met with in the service of M. Rayer and that of others.

M. Chomel has devoted a very interesting clinical lecture to this important subject, the principal heads of which are thus reported by Dr. Rognetta.

In most of the patients, the affection commences with shivering, followed by fever and delirium. In some the disease is preceded by a painful swelling of several of the glands in the neighbourhood of the jaw. When this appears in a subject, otherwise well constituted, and in good health, an attack of erysipelas in the course of three or four days at most, may, with certainty, be predicted. This remark, which we owe to Frank, has been verified by M. Chomel. In others enlargement of the glands comes on *after* the appearance of the erysipelas. To these preliminary symptoms there succeeds a swelling of one side of the face, with redness, tension, and pain, as in other kinds of erysipelas. The disease invades, by degrees, the whole of the face, and then extends to the scalp. The delirium and fever continue for several days. In some cases the disease commences in the scalp, and from that extends to the face. When confined to the scalp, the nature of the disease is easily overlooked; it may be mistaken for a rheumatic or neuralgic affection, in consequence of its not presenting the same characters as in other regions. The importance of a correct diagnosis in relation to treatment, will be readily understood; for erysipelas of the scalp may terminate in death. Two or three cases of the kind have occurred to M. Chomel; the erysipelas originated spontaneously, could be traced to no traumatic cause, and in healthy well-constituted individuals, who had never previously been subject to the disease. It is generally believed that in such cases the disease extends to the membranes of the brain, as there are usually head symptoms from the commencement. This, however, according to M. Chomel, is not the case, because in the cases just alluded to, nothing whatever was found within the cranium; the brain, as well as its membranes, were healthy.

The following are the characters by means of which erysipelas of the scalp may be recognized. If there are enlarged glands at the roots of the jaw, there is a presumption that erysipelas is present, as has been already remarked. On separating the hairs as far as their roots, over the swelled and painful parts, the skin is found of a gray colour, slightly tinged with rose-red. This hue is not the same as that of the skin of the face, or any other part affected with erysipelas; but neither is it that which the scalp exhibits in the normal state. The difference may be recognized by examining of those portions still free from the disease, which are of a whitish hue. The second character to which M. Chomel attaches importance, is that of œdema. On making pressure with the fingers over those portions presumed to be attacked with the disease, pain and pitting of the tissues are produced; the impression remains as in all other kinds of œdema, and its presence may be ascertained by passing the flat part of the finger over the spot, when the elevated and circular edge, and the hollow of the impresion, will be felt. The disease progresses from one part of the scalp to another, the fever and delirium continue with more or less severity, and the face, in its turn, becomes affected. Should the disease not have been previously recognized, its nature now becomes evident. These observations are, no doubt, interesting; yet, it is difficult to comprehend why there should be delirium for such a length of time, and of so serious a character, unless we admit an affection of the membranes of the brain. M. Chomel endeavours to explain the fact by referring it to the irritation experienced, by the numerous nervous filaments, of the face and scalp. Dissection in other cases, however, has incontestably demonstrated the existence of a series of small abscesses within the orbit, the cranium, and in the neighbourhood of the orbit:—and the membranes, moreover, injected. (Piorry.) It must not be forgotten that in tissues where the ramification of the vessels is so minute, as in the membranes of the brain, inflammation does not always leave appreciable traces in the dead body, more especially if the disease has continued for any length of time, and blood-letting has been practised. Erysipelas, in its essence, is nothing more than a vascular inflammation, a capillary artero-phlebitis, which is transmitted to the lymphatics, or originates in them, as the latter have communications everywhere with the veins, whatever M. Serre may say to the contrary. We know, moreover, that external erysipelas itself does not always leave well marked traces of its existence in the dead body, and for the very reason, we repeat, that the disease is one of vascular inflammation, whose intensity may be sufficient to produce death, but not great enough to leave morbid secretions, as in other inflammations. We have thought it necessary to enter into these details, in order to account for the negative dissections of M. Chomel.

Another fact, of no less interest, adduced by M. Chomel, is one having reference to a symptom which is precursory to the extension of the disease. Every time the disease shows a disposition to extend from one point to another, there is produced, at the limit of its extension, a red elevation of the skin, of the thickness of a line and a-half, which is easily recognized. This kind of conterminous swelling indicates a disposition to extend, and, by means of it, the periods of shifting may be recognized, and, in its absence, the period of definite fixation. This double character is of importance, especially when we wish to determine the value, says M. Chomel, of certain remedies reputed to possess the power of limiting the progress of erratic or wandering erysipelas. With the view of determining the value of flying blisters, nitrate of silver, and mercurial ointment, M C. applied them in those cases in which the elevation, of which we have just spoken, was present, but he never found them either limit or arrest the progress of the affection. The erysipelas, he says, always cleared the limits drawn by the blister, nitrate of silver, and mercurial ointment, and continued its progress. Whence he concludes, there must have been some illusion; and that the success attributed to these means was the mere effect of coincidence, no attention having been paid to the condition just spoken of, and that, in such cases, the disease would have stopped naturally. M. C. has witnessed cases of erratic erysipelas, where the inflammation progressed as freely over surfaces which had been accidentally covered with a blister, as elsewhere. M. C. takes no account of the dynamic action of these remedies. They may, however, be useful by their antiphlogistic action, although they produce no effect in checking the progress of the disease.

At this point M. C. took a general view of other inflammations, particularly pneumonia, and taxed those who pretend to arrest such inflammations at their commencement, by means of repeated bleedings, as labouring under a gross delusion. Every acute inflammation, he remarked, whatever treatment is pursued, has four distinct periods through which it must pass, and which nothing can prevent:—viz., a first stage of more or less intensity; a relative progressive stage or period of increase; a stationary period; and a period of decline. The intensity and duration of these four periods may no doubt be abridged by efficacious treatment. but the disease can never be completely cut short, or strangled, as has been pretended. The same argument applies equally to erysipelas.

The treatment adopted by M. Chomel, in erysipelas of the head, consists in venesection. repeated or not, according to the intensity of the fever and the delirium; in saline purgatives repeated every day; blisters to the feet, flying sinapisms on the legs, and cooling drinks. One condition of great importance is that of keeping the patients nearly in a sitting posture in bed, so that the head is elevated; it is also kept uncovered for the purpose of preventing an accumulation of heat, and consequent congestion. All the patients so treated at the Hôtel Dieu have been cured. M. Rayer has adopted nearly the same principles, and has also found them to answer well. M. Chomel disapproves of the application of leeches either to the diseased region or its neighbourhood, in consequence of their bites favouring the extension of the erysipelas. He also disapproves of tartar-emetic, in consequence of the vomiting caused by it, and the augmentation, according to him, of the cephalic congestion thereby. In M. Chomel's eyes, tartar-emetic is a mere evacuant remedy; its dynamic action, the only intrinsic and efficacious one, he holds to be of no value. The neutral salts and castor oil appear to him preferable.

We may here mention, that we have seen M. Bouillaud treat erysipelas by means of repeated bleedings, and the free application of axunge to the inflamed tissues with good success. M. Mojon has found tartar-emetic in solution very efficacious as a topical antiphlogistic, when applied continuously by means of compresses. Its application in this form whitens the tissues, and abates the inflammation. If preferred, the solution may be used tepid, but it is better cold, and no risk is incurred by its application.

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37. *New Views in relation to the Etiology and Treatment of Phlegmonous Erysipelas.* (*Annales de Thérapeutique*, Jan., 1846.)—M. GERDY has for some time past devoted attention to the interesting question of the etiology of phlegmonous erysipelas of the limbs, in consequence of the occurrence of many cases of this disease in his wards at *La Charité*. In the cases in question the erysipelas originated from a traumatic cause—being produced by contusion, with or without a wound in the fingers, hand, elbow, foot or leg. The disease first appeared as a simple erysipelatous redness around the wound, then the part began to swell, and assumed a phlegmonous character, the erysipelatous redness extending with the swelling. M. Gerdy attributes the disease to the naturally declined position of the extremities, to the stagnation of the blood in the peripheral capillaries of the latter, in consequence of which the contused part first becomes superficially inflamed under the form of erysipelas, and, subsequently, more deeply under that of phlegmon; and, if not speedily remedied, by the means we are about to indicate, the disease passes into that of suppuration, the consequence of which is, the formation of dissecting abscesses, and separation of the integuments to such an extent as to necessitate amputation or produce death. Erysipelas seldom assumes the phleg-

monous or suppurating character in the head or neck; and for the reason, says M. Gerdy, that the cause we have first indicated does not operate there, the venous circulation being free and descending. Thus, then, according to M. G., erysipelas of the extremities readily passes into that of phlegmonous suppuration, in consequence of the weight obstructing the progress of the circulation upwards, and to the same circumstance may be attributed the peculiarly serious character of punctures of the fingers, which are apt to terminate in panaris or phlegmon. Dupuytren endeavoured to explain the difference, in course, of erysipelas in the head, from that in the extremities, by a peculiarity in the anatomical distribution of the nutritive vessels in the two parts. The true reason, however, says M. Gerdy, is to be sought for in the laws of gravity as applied to the circulation.

As a consequence of these views, M. Gerdy considers that an essential part of the treatment consists in keeping the extremity in an elevated position, so as to prevent stagnation of the blood, and assist its circulation upwards. The good effects from this mode of treatment are most striking. In fact, under the influence of position alone gradual amendment will be observed, or even a complete cure; should the disease have a tendency to descend, a too elevated position may cause it to retrograde, as we lately witnessed in the wards of M. Gerdy, in a case of phlegmonous erysipelas of the fore-arm, the result of a contusion of the elbow; the disease was descending, and had invaded the superior half of the fore-arm, when the patient had the resolution to keep the arm for a long time suspended, by means of a cord attached to the roof of the bed. Next day the disease had disappeared from the fore-arm, and had extended to the posterior part of the arm; the member had then to be placed in a less elevated position. It must be observed that we are not now speaking of simple erratic erysipelas, for we know that phlegmonous erysipelas extends, without leaving its primitive place of origin, and does not become displaced. We have seen very many cases of this kind undergo great amendment in M. Gerdy's wards, from the simple fact of putting the limb into an elevated position, by means of pillows, and properly adapted inclined planes. All this does not, of course, supersede the application of both local and general means of treatment. M. Gerdy has recourse, at an early period, to deep incisions, by which means he relieves the engorged tissues, and predisposes them to speedy resolution; but, we repeat, these remedies are of little avail, unless the position of the limb be, at the same time, attended to. By an early recourse to this mode of treatment, sinuses, and the formation of large abscesses, are avoided; or if suppuration does occur, it is confined and circumscribed, and has more the character of that which takes place in the head and neck, under similar circumstances. These remarks are the result of lengthened clinical observation, and may be verified by any one, such cases being of every day occurrence. The chief point is the influence of gravity in aggravating the disease, and the indications which may be drawn from this in the way of prophylaxis and cure.

38. *Substernal Goitre.* By Dr. Giehrl.—There is a species of goitre as yet very little known, which consists in the prolongation of one of the lobes of the thyroid gland, which extends under the clavicle into the cavity of the thorax, where, by its development, it causes death by compression of the viscera contained in this cavity. A case somewhat analogous is reported by Boerhaave, of an admiral who died with symptoms of asthma, in whom the thymus gland was found much hypertrophied.

The first observation, described by Dr. Zingl of Munich, was that of a female servant, who was affected with dyspnœa and palpitations of the heart, which were increased when she moved about: at the same time the thyroid became swollen, and varices formed in the neck; she suffered frequently from catarrh and sharp pains in the side; presently the dyspnœa became extreme, the cough more severe, and the palpitations more obscure, but extending over the whole chest; frequent lancinating pains through the thorax: at length extreme orthopnœa, delirium, and death. At the autopsy, the thyroid gland in the neck was found a little increased in size, but it extended under the sternum as far as the pericardium. This prolongation, which was hard, almost scirrhous, and traversed by varicose veins, weighed more than two pounds.

The second instance, which was also observed in the hospital at Munich, is that of a man of forty years of age. He suffered from severe dyspnœa; the face was swollen and red; the pulse was full and hard; he had cough, obscure palpitations of the heart, lancinating pains in the chest; the respiratory murmur was indistinct on both sides, but chiefly obscure in front; the neck was hard, without distinct goitre; there was no œdema of the lower extremities; small blue spots similar to petechiæ appeared on the arms subsequently to two venesections; extreme orthopnœa, with anxiety and cold sweats; he died three days after his admission into the hospital. On opening the chest, a large hard tumour was found occupying nearly the whole chest, covering the pericardium, as far as the diaphragm, to which it was adherent. Above, it extended under the clavicle to the left lobe of the thyroid gland, of which it was evidently a prolongation. It had the appearance and consistence of a hepatized lung; on cutting into it a turbid fluid escaped, whitish and viscous; the two carotids, the descending vena cava, the par vagum and sympathetic nerves on both sides were surrounded and compressed by the tumour. It is probable that the tumour had existed for a long time, and had not caused any alarming symptoms; but in consequence of inflammation set up in its substance, it had attained a considerable size, and had thus interfered with respiration and circulation, especially of the superior vena cava; hence the symptoms observed before death.—*Gaz. Méd. de Paris*, 15 Nov., 1845, from *Neue Medicinisch Chirurg. Zeit.*

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39. *Some Remarks on Wounded Arteries, Secondary Hemorrhage and False Aneurism.* By Robert Liston, F. R. S. (*Proceedings of the Royal Med. and Chirurg. Soc.*)—The author states that the subject of wounds of arteries, with the consequences of such wounds, immediate and remote, has possessed, and always must possess, great interest in the eyes of the surgical practitioner. His impression, until very lately, was that no subject had been better handled or was better understood by surgeons generally, and that all writers were pretty well agreed as to the rules which ought to guide the practice in such cases. When. however, we hear of an operation being performed upon a large vessel on account of a recent false aneurism, after careful consideration of all the circumstances of the case by six surgeons, and when there is reason to believe that, at least, an equal number of respectable practitioners (not, however, engaged in the case) were ready to declare the practice pursued very wrong, and contrary to the established principles of surgery, and thus, had the vessel not been tied, the patient might now have been alive, it is surely desirable that an opportunity should be afforded of discussing this subject, and, if possible, settling the question in dispute. The author then proceeded to relate very shortly the leading facts of the case, and to support the line of practice pursued, by reference to, and relation of, some similar instances.

Mr. S. æt. 28, an exceedingly corpulent person, who had, it appears, lived excessively freely for a series of years, was wounded on 23d of May, 1845, by a pistol-bullet. It entered the upper and outer part of the right thigh, and passed out in the middle of the fold of the left groin; thus traversing the course of the femoral vessels. The flow of blood, more especially from the wound on the right side, was described to have been impetuous and profuse. It was thrown in jets to a considerable distance. The patient was found by Mr. Jenkins, of Gosport, in an almost lifeless state, and he was with great difficulty recovered from the syncope and depression. A considerable swelling soon supervened over the lower part of the abdominal parietes from extravasation of blood.

May 27th, the seventh day from the receipt of the injury, the swelling in the right groin began to increase in size, and distinct pulsation was then, for the first time, perceived in it. The tumour went on increasing gradually, and it had gained much more in bulk on the tenth day, when I first saw him, than it had done on any of the preceding ones. It was of an oval form, and elastic, but firm, as if it was partly made up of coagulum and liquid blood; but it could not be at all diminished in bulk by uniform and continued pressure. The skin covering the tumour was discoloured, thin, and incapable of bearing pressure. Pulsation was strong and distinct in all its parts. The opening on the right hip was filled with a dry depressed slough; the wound in the left groin, a jagged slit, was closed by a very thin cicatrix. The patient's countenance was blanched and waxy, and his pulse quick and feeble. He had, in short, all the appearances of a person who had lost a great quantity of blood.

The nature of the case was very apparent. A large false aneurism, not well bounded, rapidly increasing, and arising from a wound of the femoral artery, or some branch divided close to its origin, had to be arrested, otherwise the patient must be left exposed to the risk of perishing suddenly, and at no distant period. After consultations, on the evening of the 30th, and morning of the 31st, the external iliac artery was tied, with the loss of not more than a tablespoonful of blood, and with the immediate effect of arresting the pulsation, and removing, in a great measure, the tension of the tumour. Symptoms of peritonitis supervened the evening of the second day, and on the following afternoon the patient sunk.

The author subjoined an account of the post-mortem examination by Dr. Allen, of Haslar. The course of the bullet was traced from the outside through a dense layer of fat, about two inches in thickness. It had divided one of the superficial branches of the femoral artery, about half an inch below Poupart's ligament, and about an inch from the main body of the femoral artery, which had caused a false aneurism. The sac contained about three ounces of blood. No other artery appeared to have been wounded. A considerable quantity of sero-purulent fluid was found in the abdominal cavity, and patches of acute inflammation were observed on the intestines. The peritoneum adjoining the wound of the operation was inflamed. It had not been injured by the knife. The ligature had been properly applied to the external iliac artery. The abdominal viscera were healthy, but loaded to an extraordinary degree with fat. There was some enlargement of the right limb, but apparently no mortification. The femoral artery was pervious. The blood in the aneurismal sac was firmly coagulated, and there was no mark of recent oozing from the injured artery. The ball had passed immediately over and along the course of the artery for about half an inch before dividing it. The artery, although not actually detached, would not have borne a ligature.

That a vessel of this class, the author remarked, should have bled so furiously, in the first instance, could not have been anticipated. Having done so, one can so far understand the active pulsation and rapid extension of the tumour. It was, of course, quite impossible to determine whence the blood flowed into the aneurismal cavity. The principal vessel going to the limb might have been wounded, or some considerable branch. A small branch, divided close to the principal vessel, poured out blood furiously, as much so as if an opening in the coats of the artery itself were made by a portion being punched out, corresponding in size to the area of the branch. The division of a small branch at a distance from the source from which it springs is of little importance. It contracts, and soon ceases to bleed; but when it is divided close to the trunk, blood issues from it, as it would if an opening, equal in size to the calibre of the little branch, were made in the trunk itself.

The author noticed the risk of secondary hemorrhage in these cases, in order to show that some active measures were required to arrest the threatened danger. He objected to the operation of opening the sac, and securing the wounded vessel by ligature; that patients who have lost a great quantity of blood are often sunken and lost by the sudden effusion of even a small quantity, and, after adducing some cases in point, he remarks that the danger must be enhanced when the tumour is so placed that there is no possibility whatever of making pressure on the trunk of the artery on the proximal side of the opening into it, or of the origin of a branch wounded close to where it is given off, as in the case of Mr. S. The cyst could not have been opened without great loss of blood, and it was not likely that a ligature on the branch would have permanently arrested the bleeding: indeed, it was stated by Dr. Allen that the trunk would not have held a ligature.

The author having asked, whether there is anything to bear a surgeon out in adopting this practice, adduced a number of cases to show that vessels bleeding outwardly, or pouring their contents into the tissues of a limb or region, have become permanently closed in consequence of the flow of blood being intercepted and weakened for a time by the application of a ligature upon the principal arterial trunk. A man, thirty years of age, was wounded by a musket-ball, which entered the left groin, and passed through the inside of the thigh. On the "tenth day from the injury, the slough from the anterior wound came away, and was followed by so frightful a hemorrhage as to leave no doubt whence it proceeded, nor, from the wound being so high up, any alternative as to the means to be adopted for stopping it." The external iliac was tied, but the patient died of fever. No account is given of any dissection of the parts. "In this case the necessity of the operation is evident, and, as far as it went, also its success. Not a drop of blood was lost after it." So says Mr. Guthrie, who, it is to be presumed, conducted the treatment of the patient. We are left to conjecture what vessel was wounded. It may have been a branch, as likely as the trunk, and those who have attended to the description of the hemorrhage in the case of Mr. S.—to its impetuosity and amount—will bear the author out in this assertion.

The author observed that he has endeavoured to show: 1st, that the case of Mr. S. was one of great and immediate danger; 2d, that some decisive step was required to be taken, and that without a day's delay; 3d, that very great risk would have been incurred in attempting to put a ligature on the wounded vessel; 4th, that there was ample authority for adopting the step which was had recourse to in the case. The dangers likely to arise from the operation were considered as weighing but lightly in the scale against those impending from the effects of the pistol shot. Inflammation of the peritoneum was scarcely taken into account in consulting on this case. Out of the forty-five cases of this operation, collected by Mr. Crisp, nine, or one-fifth died, but not one from peritoneal inflammation.

In conclusion, the author remarked that, in the opinion of those concerned, the step most likely to avert danger, and prolong the patient's life, was adopted; the only step, it has been shown, that could have possibly been resorted to with propriety or safety. Upon a candid review of the case, and with a knowledge of all the circumstances connected with it, it now remains for the fellows of the Society to say if there was left anything undone, or anything done imprudently or unscientifically, as has, it appears, been alleged. It is competent also to consider what might have been alleged against the resources of our art had the patient suddenly perished from hemorrhage; if, in fact, we, who had all the responsibilities of this important case to sustain, had stood idly by, waiting for some miracle of nature to save the patient from the inevitable results of his wound, and the author of it from the consequences of his crime.—*Lond. Med. Gaz.*, April, 1846.

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40. *Disease of the Brain following the Application of a Ligature to the Carotid Artery.*—By JOHN P. VINCENT, Esq., Surgeon to St. Bartholomew's Hospital (*Proceedings of Royal Med. and Chirurg. Soc.*, Jan. 13, 1846.)—The author states that the two following cases appear to possess an interest that entitles them to be placed under the consideration of the society.

James M——, aged 48, in July, 1829, was admitted into St. Bartholomew's Hospital with an aneurismal tumour under the right ear. It had been forming eight months, and was about the size of a small orange. On July 18th, the author tied the common carotid artery. In about an hour and a half after the operation, the patient was discovered to be slightly convulsed on the right side. He afterwards sunk into a state of stupor. He was bled to thirty ounces. After this he became more sensible. He had twitchings of the right side. He was again bled during this and the two succeeding days, and altogether lost eighty-four ounces. His left side became paralyzed; his urine and feces passed off involuntarily; he swallowed with difficulty; and on the 24th he died. On examination of the body, it appeared that the veins of the right side of the brain were not so filled as on the left. The substance of the brain on the right side was quite soft and cream-like. There was no deposition of blood in any part, but a little more serum in the ventricles than usual.

On the 9th of April, 1845, Wm. B——, aged 28, was admitted into the hospital, having stumbled, a few hours previously, against a door whilst smoking a pipe, which penetrated the tongue anterior to the right tonsil. The patient felt a portion of the pipe in the wound, but was not able to remove it. There was some bleeding, which gradually subsided. The voice was husky. He complained of pain, which was increased on his attempting to swallow or to open his mouth. On introducing a probe into the wound, no foreign body could be detected. The parts around the wound were greatly swollen. During the next five days the swelling gradually increased, and impeded deglutition. On the morning of the fifth day his breathing became difficult. On the 16th, hemorrhage took place to the extent of twenty-four ounces, which was arrested by pressure. The autho was sent for, and fearing that if the pressure was remitted the hemorrhage would prove fatal, he proceeded to tie the carotid artery. This could not be accomplished without much difficulty, arising from the swollen and sloughing state o the parts, and from the effusion of pus and blood, and also from the excessive restlessness of the patient. It was observed during the operation that the patient made violent efforts with his right side, but that he never moved the left extremities. During the night the left extremities were frequently convulsed. His pulse which had been 132, sunk to 96. During the next two days the twitchings of the right side and paralysis of the left side continued. About midnight of the 18th whilst coughing, about an ounce of arterial blood flowed from the nose and mouth, and from the wound in the neck. He was sensible. On the 21st a fit o coughing, with hemorrhage, to the extent of two or three ounces, from his nose and mouth, terminated his existence.

Examination of the body.—The wound in the neck presented a sloughing appearance. At the bifurcation of the carotid, on the right side, there was a large and firm coagulum, in the middle of which was the extremity of the tobacco-pipe which had penetrated the artery at the point of division into external and interna carotids. The convolutions of the brain on the right side were flattened and softened. On dissecting the brain, irregular-shaped cavities, filled with ash-coloured effusion, with shreds and particles of a greenish hue, were discovered One of these encroached on the corpus striatum.

The author adds, that if the portion of tobacco-pipe had been detected at the time the patient was brought to the hospital, and withdrawn from the wound, he must have died instantly from the gush of blood that would have taken place, a this body seemed to have plugged the artery. The author had understood tha such a sudden fatal event has occurred under similar circumstances.—*Lond. Med Gaz.*, Feb. 13, 1846.

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41. *Aneurism of the Carotid Artery—Ligature of that Vessel.*—Dr. G. Whit reports in the *Lancet*, (Feb. 7th, 1846,) a case of aneurism of the carotid artery for which he placed a ligature on the vessel below the tumour with a successfu result. The subject of the case was a printer, 34 years of age, of not very temperate habits. The tumour was of considerable size, occupying the right side o the neck, from just below the ear to within two fingers breadth of the sternum the larynx was pushed considerably to the opposite side, and the sterno-cleido mastoid muscle was forced outwards and backwards. The tumour commence between two and three months previously, at the upper part of the neck, an gradually extended downwards as it grew larger.

The operation was performed, August 28th, 1845, in the following manner:— The patient being laid on a table, in such a position that the light fell directly o his neck, an incision about two inches long, was made through the integument in nearly a perpendicular direction, and terminating at the inner margin of th attachment of the sterno-mastoid muscle to the sternum, the upper part of th incision being between the tumour and the trachea. This exposed a large vei round which two ligatures were placed, and the vein divided between them. Th fascia and some loose cellular tissue were next divided, and the edge of th sterno-hyoideus brought into view. Crossing the upper angle of the wound wa just seen the omo-hyoideus. At this stage of the operation, very moderate pre sure with the point of the finger at the bottom of the wound arrested the pulsatio of the tumour; but the beating of the carotid could not be felt. The sides of the woun were held asunder by blunt hooks, and the wound kept clean by small bits of spong put to the bottom of it by means of forceps. With the forceps and scalpel the sheat of the artery was now scratched through, a nerve (descendens noni) was see and pulled aside by the blunt hook, and the artery was fully exposed. An arme aneurism-needle was, with some difficulty, passed behind it from the outer side but from the great depth and narrowness of the wound, the needle's point coul not be brought forward on the inner side of the vessel. The needle was therefor withdrawn, and another, the curve of which formed a segment of a muc smaller circle, was introduced with facility. The artery, as it now lay on the aneurism-needle, was compressed with the tip of the finger, and the tumour's pulsation was found to be commanded; the pulsation in the vessel itself was very feeble. The needle being withdrawn, and the ligature firmly tied, the edges of the wound were brought together by two points of suture, and some strips of Macord's plaster.

Scarcely an ounce of blood was lost during the operation.

Mr. White conceives that the operation was much facilitated by the adoption of the following ingenious expedient suggested by Mr. Sibson. Before commencing the operation, the patient was desired to exhale completely, and to keep his chest as empty as possible. While in this state, the upper part of the chest was closely surrounded with a very long firm bandage, and he was instructed to respire, as much as practicable, by the diaphragm and abdominal muscles. By this means the length of the neck was materially increased, and the cervical veins were prevented from being alternately distended and emptied. It is remarkable that the internal jugular vein was not seen. On the six day some hemorrhage took place, which was quickly arrested by pressure on the wound with a sponge wrung out of cold water; about two or three ounces of blood were lost.

On the tenth day the ligature was found loose in the wound. In the evening hemorrhage to the amount of a pint occurred, which was somewhat restrained by pressure with the cold sponge. The wound was then filled with lint, and a large graduated compress placed over it, and some pressure kept up by means of strips of adhesive plaster, and a bandage passed in the figure of 8 under the arms.

The next (11th day,) the hemorrhage recurred to the amount of three or four ounces, but ceased spontaneously. From this time the case went on favourably, and on the 20th October he returned to his occupation in the printing office.

At the date of the last report, Dec. 15, the wound had healed for some time, the tumour had diminished to one-sixth of its original size, and the patient's health was good.

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42. *Ligature of the Subclavian Artery on account of Hemorrhage from a Wound of the Axillary Artery.*—Dr. Richard J. Mackenzie communicated the following example of this to the Medico-Chirurgical Society of Edinburgh.

A man, 35 years of age, had fallen with his whole weight on a red hot poker, which he held in his hand, the point, which was at a dull red heat, entering the right axilla. A deep and scorched wound was made, from which, on the separation of the slough eight days afterwards, profuse arterial hemorrhage took place. The bleeding was checked by the application of a compress and bandage, but was renewed two days afterwards, when the same measures were adopted. On the fifteenth day from the injury, after repeated returns of the hemorrhage, the arm was swollen and hard, and the patient complained of cold and a sensation of numbness in the hand and fore-arm; he was blanched and exhausted from loss of blood, and complained much of the pain produced by the pressure in the axilla. The bleeding was easily commanded by the compress and bandage, but the dressings again became saturated with blood, in twenty-four hours after their application.

On consultation, it was determined that a ligature should be applied to the subclavian artery, over the clavicle, which was done on the same day, (November 19th,) fifteen days after the receipt of the injury, and seven after the first bleeding from the wound in the axilla. The compress and bandage were removed on the day following, and no return of the hemorrhage took place. The wound in the axilla speedily assumed a healthy aspect, and the patient made a rapid recovery. The ligature separated on the twentieth day after the operation, a week after which both wounds were entirely cicatrized. On the 20th December, the patient had returned to his employment, and was quite well.—*Monthly Journ. Med. Sci.*, March, 1846.

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43. *Gun-shot Wound, and Excision of the Head of the Humerus.* By Thomas Stratton, M. D., (*Edin. Med. and Surg. Journ.*, Jan., 1846.)—The subject of this case was an Indian boy, 6 years of age, who was wounded, August 10th, in the left arm by the accidental discharge of a gun heavily loaded with duck-shot, he being

at the time about six feet from the muzzle. When seen by Dr. Stratton, August 16, the wound at first sight appeared to extend along the outer side of the arm from the shoulder to the elbow, but on re-applying a flap two inches long at its lower extremity, the wound was reduced to four and a half square inches. In the upper half of the arm the soft parts were much injured, part of them seemed to have been shot away, and in the margin of the wound there were several shot holes in the integuments; two inches of the shaft of the humerus was destroyed; there was a thin glairy discharge from the upper part of the wound; a part of the shaft of the humerus two inches long, and several other loose pieces of bone were removed, and also a quantity of moss which the Indians had applied to stop the bleeding, which they say was not great at the time of the accident. There was but little constitutional disturbance; the skin was cool, the tongue moist, and the appetite moderate. To take castor-oil, and a cloth dipt in cold water to be applied over the wound.

The next day, (Aug. 17,) Dr. S., with the aid of Dr. Nicholson proceeded to remove the head of the humerus. The patient was laid on a table with his left shoulder projecting over its edge. Of the lower part of the humerus the projecting extremity had been broken very obliquely, and on bending the arm at the wound this sharp and almost pointed end was removed, partly with a saw and then with the nippers. Dr. S. then took hold of the lower extremity of the upper part of the humerus, and with a small double-edged scalpel cut along it upwards towards its head, from the side of which a small splinter was removed. The head was then turned out of the socket by using the scalpel around it and turning the other end towards the chest; the part thus removed measured two inches; no vessels required to be tied. Search was made in the soft parts for any pieces of bone that might have been driven in by the shot; lint wet with water, was for the day put in the socket, the soft parts were adjusted so as to make the breach as small as possible; with a sling the elbow was raised up so as to aid nature in shortening the arm, in order that the loss of bone might be less felt; a single turn of a bandage confined the arm to the side, and a cloth dipt in cold water was applied over the wound.

August 18. Slept well; skin cool; bowels open; tongue moist; some thirst; the weather is hot, the thermometer being generally about 84° Fahrenheit in the shade; the lint is removed from the socket, and thin rags dipped in water are applied over the wound, which is five inches long, two and a half broad at its lower, and four and a half inches at its upper extremity. A number of maggots have appeared, on which account a solution of the chloride of lime, (half a drachm to a pint of water,) was applied to the wound.

August 19. He is proceeding favourably; very few maggots to-day; to continue to wet the cloths with the solution of the chloride of lime and with water alternately. To have a small quantity of Port twice a-day.

The patient continued to go on well; a month after the operation he sat up in his bed; several pieces of bone were subsequently discharged, but the wound entirely closed on the 7th Dec., 112 days after the operation. At this period he moved the left elbow forwards and backwards as freely as before, and elevates i to within an inch as high as he can raise the right elbow; the left arm is abou two and a half inches shorter than the right.

At the date of the last report, April 28th, eight months after the operation, the patient was well; he had nearly as much use of the arm as before the accident He uses the axe and lifts weights easily. He moves the left arm as freely in al directions as the right, except that he cannot elevate it quite so high. When h is dressed there is no observable difference between the arms; when undressed the left shoulder appears flattened.

Dr. Stratton, in his remarks, states that the soft parts were so much destroye by the gun-shot injury, that the long period of three months and a-half was required for recovery. About four or six weeks of this delay was occasioned b the slow progress to the surface of fragments of bone which had been drive far into the soft parts. There was no use made of cataplasms or of unctuou dressings, the applications being of water alone, or with chloride of lime, or wit sulphate of zinc, as a stimulant, as recommended by Mr. Liston. It was unfavourable for such a large wound, that in August the weather was very ho which encouraged the appearance of maggots about two-thirds of an inch long. A few seen one day were followed on the next by hundreds; the rapidity of their production and growth is surprising. Perhaps they do not physically impede the cure; but, besides the loathesomeness of such creatures being about a wound and bed, they alarm a patient and his friends, and thus have a depressing effect on his mind. After they had been troublesome for a few days, chloride of lime was procured, and they disappeared.

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44. *Polypi of the Female Urethra.*—In our preceding number (p. 484.) will be found some interesting remarks by Dr. Lever, on the vascular growths which occur in the female urethra, an affection to which sufficient attention has not been directed. With a view of furnishing a more complete history of the disease, we shall now present a summary of an interesting thesis (*Thèses de Strasburg*, No. 129), by Dr. M. H. Bavoux, as given in the *Archives Générales*, for September last.

In the female urethra both a mucous and vascular structure exists, and this peculiarity gives to the polypi which occur in it a peculiar character. They possess both a mucous and a vascular structure, and these two characteristic elements are never observed increasing independently of each other. On the contrary, these small bodies are constantly seen to originate from hypertrophy of the mucous membrane, into which numerous vessels from the subjacent erectile tissue are prolonged, so that of all the species of polypi described by authors, those which, in a descriptive point of view, approach nearest to these tumours of the urethra are, without doubt, the fungoid species; with this distinction, however, that these polypi rarely, and as it were exceptionally, degenerate.

Polypi of the urethra very rarely occur before the age of puberty, and appear to have for their cause a too great stimulus of the genital organs. Thus the affection is more frequently met with in prostitutes than in other females. Schutzemberger has seen them occur after blennorrhagia; but, of course, frequent coitus or masturbation may act in the same manner.

The polypi sometimes project beyond the orifice of the urethra, and lie between the large labia; they are sometimes retained within the interior of the canal; and hence, the division into *external* and *internal* polypi.

External Polypi are of much more frequent occurrence than the latter, and generally originate from the posterior wall of the canal, near the meatus urinarius, a circumstance which did not escape the observation of Boyer. At other times, however, they originate higher up and thus remain concealed for a longer or shorter period, till by their increase in size, or the elongation of their pedicle, they at length protrude. Their size is seldom considerable; it varies from that of a currant to that of a large cherry, and rarely exceeds that of the latter. The pedicle is in general large as compared with the size of the polypus, and decreases in size as the latter enlarges. Their shape at the commencement is very generally that of a cone; at a later period, from the increase of growth being irregular at various points, they assume a lobulated appearance. Their surface is most generally of a bright red colour; at other times it is somewhat pale, and at others of a deep red: sometimes they are entirely covered with a thin smooth epithelium; at others, this is wanting, and then they exhibit a villous fungoid aspect, similar to that of a wound in a state of suppuration. In this latter case, the tumour bleeds more easily when touched, is more painful, and smarts from contact with the urine. In general, polypi of the urethra cause no pain; in some cases, however, a sensation of burning, or even of extreme pain, is produced after walking, coitus, or the passage of the urine; the pain may extend to the fundus of the bladder, rectum, or uterus, so as to lead to a suspicion of disease in the latter. They are sometimes the cause of hematuria, and very often of slight hemorrhage after coitus. In some circumstances there is over-excitement of the genital organs; but there is rarely any difficulty in passing urine, and still more rarely incontinence of urine, even in those cases where the urethra is so much dilated as to permit the entrance of the finger. At first, their growth is pretty rapid, but after attaining the size of a bean or a cherry, it becomes slower, or they remain altogether stationary. In one case in which the author saw the tumour developed, as it were, under his eyes, its commencement was marked by the rise of groups of vascular granulations on the lower wall of the meatus; these granulations soon became united at their base; the interstices which existed between them were filled up, and thus a polypus of the size of a pea was formed, with a tolerably large pedicle; it was excised by means of a pair of scissors. In general, polypi of the urethra are not a serious affection and may continue for an indefinite period. Spalderer, according to M. Gerdy, saw one evacuated with the urine. M. Tanchou, on the other hand, regards it as a disease very difficult to be rooted out in adult females; but it is probable, that the cases witnessed by M. T. were not cases of true polypus of the urethra.

Internal polypi seldom occasion any well-marked symptom which may lead to the suspicion of their existence; after attaining a certain size they make their appearance externally, and then come under the description of those we have just given.

The author has traced, with great care, the differential diagnosis between polypus of the urethra, and some other affections for which it may be mistaken. The absence of accurate diagnosis is of little importance, as far as regards distinguishing it from hernia or hypertrophy, either of the mucous membrane or its folds; but the case is very different as regards introversion of the fundus of the bladder, or venereal vegetations. Introversion of the fundus of the bladder is characterized by the presence of a soft reducible tumour, of the size of a nut, and of a bright red colour; it is accompanied with severe pain and dysuria, which disappear after the introduction of a sound into the urethra. Polypi, on the other hand, are soft, indolent, irreducible tumours, which occasion no inconvenience in the excretion of the urine, and offer no obstacle to the introduction of the catheter into the urethra. An error in diagnosis between these two affections is easily committed, and if not avoided, would lead to danger; more especially if excision of the tumour were attempted; but an error scarcely less unfortunate is that of mistaking polypi for venereal vegetations, not only because it throws suspicion on an otherwise innocent person, but also as subjecting her to a course of general treatment not altogether void of danger. An attentive examination of the tumour ought to remove all doubt. How indeed can a solitary, pediculated tumour, of a redder colour than the membrane, but having its consistence. bleeding easily, with a regular or a lobulated surface, of a smooth or shreddy character, but always soft, be confounded with those small, hard, unequal projections of the size of a pin's head or a hemp seed, or with red granular excrescences, or, finally, with those small flattened prolongations of the mucous membrane of the vulva, with irregular edges?

Treatment.—The author has never seen any good result from topical applications, (acetate of lead, for instance), or repeated cauterizations. Pressure, by means of conical bougies introduced into the urethra, as advised by Madame Boivin, has likewise appeared to him of little benefit. Removal of the tumour, either by scissors or ligature, is the only treatment he has found to be efficacious In a case still under treatment, the tumour separated four days after the application of the ligature. Excision is more expeditious and less painful. It may be performed with a pair of curved scissors, the tumour having been previousl seized with a pair of forceps, or a thread passed through its pedicle, so as to dra it outside the canal. In cases of internal polypus, the canal must be previousl dilated or an incision made through its walls, as performed by Varner, ere it excision can be attempted. As a matter of prudence the point of attachment o the pedicle ought to be cauterized, in order to prevent any tendency to reproduction.

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45. *Calomel in Chronic Urethral Discharges.* By Dr. Mayor.—Calomel in powde is applied to the affected part by means of a straight hollow catheter, perforate *in its side*, but *close to its extremity:* the lateral hole is filled with calomel, and the the instrument is introduced into the urethra. By means of acting with a stoppe like a piston in a syringe, and, slowly turning the catheter upon its axis, the me curial salt is brought into contact with the seat of the discharge.

By comparative experiments, M. Mayor has satisfied himself that his cures,—accomplished, he says, as if by magic—are really due to the topical application of the calomel, and not to the mere introduction of the instrument. Th former cured many obstinate cases which the latter method did not improve.—*Encyclographie Médicale*, Jan., 1846.

46. *Calculi of the Prostate Gland.*—Numerous examples are to be found in the records of our science of the existence of calculi in the prostatic gland. In many cases these calculi have found their way into the gland from the bladder, but in others they have been unquestionably formed originally in the part. M. Lenoir related to the Surgical Society of Paris the following case. A patient, 55 years of age, had been recommended to him by a provincial surgeon, under the belief that he was labouring under vesical calculus. On introducing the sound, he found an obstacle which gave a clear sound, and which he thought was a vesical calculus, but on examining the rectum with the finger, he failed to recognize its presence. On exercising pressure, however, on the prostate, he caused the escape of about fifteen small calculi. They were of a dark yellow colour, presented facet surfaces; and gave a decided animal odour when burnt. The patient, who, when he entered the hospital, had all the symptoms of serious vesical catarrh, left nearly well. A few months later, he was again sent to Paris, under the idea that he was labouring under vesical calculus, and a number of small stones were again ejected, by pressure of the prostate. Vesical catarrh was present, as on the first occasion. M. Lenoir thought that the calculi were formed in the ejaculatory ducts, and that it was because they occupied the orifice that these produced, when touched with the sound, the sensation of a stone in the bladder.

M. Nelaton had met with a case at the Hotel Dieu, similar to the one of M. Lenoir. The friction of a sound over a hard substance in the region of the prostate had led him to recognize the presence of prostatic calculi. He managed to withdraw several by means of lithotritic instruments, and the patient left apparently cured. Two months afterwards he returned with the same symptoms, indicating prostatic calculi, and, in addition, with a vesical calculus. He was not able to lay hold of the latter in order to crush it, and was obliged to perform the operation of lithotomy. On scratching the surface of the incised prostate with his nail, he managed to make several calculi fall, similar to those described by M. Lenoir. The patient was cured. M. Michon, M. Guersent, and M. Laugier, thought that prostatic calculi were not rare; M. Malgaigne was of a contrary opinion.—*Gazette des Hôpitaux.*

47. *Lithotomy.*—Signor Bresciani de Borsa, in his *Saggi di Chirurgia Teorico-pratica*, states that of one hundred cases of stone operated on by Sig. Manzoni, of Verona, and himself, only one has died, and that from causes irrespective of the operation! This is certainly a degree of success calculated to excite our astonishment. It exceeds much even that of our countryman, Prof. Dudley, hitherto considered the most fortunate of lithotomists, he having operated, it is said, successfully in 180 out of 185 cases. Sig. Manzoni's operation consisted in cutting into the spongy portion of the urethra only, and then dilating the bulbous and prostatic portions sufficiently with the finger to admit of the introduction of the forceps and the removal of the stone. Dr. B., however, judging it more reasonable to cut into the more dilatable portion of the urethra, carries his incision from the bulb to the prostate, and even unavoidably sacrifices the latter when it advances more than usually forwards. As the admission of such an operation depends upon the dilatability of the prostate being satisfactorily proved, the author advances several reasons for this, founded on the nature of its anatomical structure, and cites various facts observed by himself and others.

The following are the details of the various steps of Sig. de Borsa's operation as given by himself, and which we copy from the *Medico-Chirurg. Rev.* for April, 1846.

"Having placed the patient in the usual position, (it is much preferable to retain him in this by means of assistants than by ligatures, for the mere ceremony of adjusting these, causes a great dread to the patient which may alone suffice to induce a low and fatal form of fever,) introduced the catheter, and made a sufficiently large external incision, I open, with a small, lancet-pointed, double-edged, strong scalpel, the whole of the membranous portion of the urethra, so as to expose the instrument to the extent of about 10 lines, in doing which it may in some cases easily happen that the apex of the prostate is also cut, although in the case in which the patient died it was found entire. I now take hold of the handle of the catheter, and passing my left fore-finger into the wound, feel the groove exposed; and as others would pass some form of gorget through the prostatic portion of the urethra and neck of the bladder, I only introduce my finger into the bladder, being certain it never can make a false passage, since I keep it in contact with the metallic instrument. I take care, nevertheless, not to pass my finger along the groove, because I should then thrust it against the internal or posterior angle of the wound, and then against the great bulk of the prostate. Scarcely do I touch the groove before, instead of following it, I pass my finger upon the right side of the staff (as regards the patient) and carry it quietly and without any obstacle into the bladder. One of the advantages of this modification is, that it enables me, in most cases, to come at once in contact with the stone.

"I then remove the staff, still, however, retaining my finger within the track of the incision, and gently moving it about in a semi-rotatory manner, effect a much greater dilatation of the prostatic urethra and neck of the bladder. Next, I pass in the forceps behind my finger and seize the stone. It has to pass along a track of only from 12 to 15 lines, or even less, since the inverse cone formed by the forceps approximates the neck of the bladder and urethral aperture, for which reason the space is shorter and more easily dilated. I remove the stone with two, or at most three semi-rotations, performed with circumspection and care, along an axis, which, commencing at the centre of the bladder, should pass through its neck, and following the centre of the prostatic urethra, terminated in the centre of the perineal aperture.

"I am in general not more than a minute after opening into the urethra before I have extracted the stone, and the operation has always succeeded in my hands. Safety, simplicity, and celerity, I have already said are desiderata of every operative process, and I am in a condition to prove that they attach to this one recommended by me. All I employ are simply a bistoury and the forceps—*simplicity*, surely, in comparison with the multiplicity of complicated instruments which has been recommended in the various and numerous modes of performing *Cystotomia*. By passing my finger along the staff, I secure that *safety* which is no usually a characteristic of operations for stone. It is related that even the celebrated Scarpa passed the gorget, which was looked upon as the palladium of hi fame, in between the bladder and the rectum. The same thing has occurred t many otherwise skillful operators. * * * * I am certain of no injuring either the pudendal artery, the prostatic venous plexus (so frequently i a varicose condition in the aged), the body of the bladder, or the rectum. Farthe by the preservation of the whole, or nearly the whole, of the prostatico-vesica canal, inflammations between the rectum and bladder are avoided, inasmuch a urinary infiltration is prevented, in consequence of the prostate not being divide * * * * * The *rapidity* of the operation is shown by the fact, th instantly after I have opened the urethra I have the stone in my hand; and an one who has ever once performed this operation, will bear witness to my asse tion. I may observe that it seems almost impossible that so many operators, all periods, have written so much, and cudgelled their brains to invent new op rative procedures for lithotomy by deep prostatico-cystic incisions, while, with simple *urethrotomy*, the desired end may be obtained, as I can prove by so ma cases."

48. *Lithotrity.*—M. Cazenave, of Bordeaux, read to the Academy of Medici of Paris, Nov. 11th last, a short statistical notice relative to the operations of lith trity, performed by him during the past fifteen years. The number of these op rations was 52. Of these 43 were entirely successful, 8 terminated fatally; o patient alone continued to suffer after the operation, although he had been reliev of two large calculi. Of the 8 fatal cases, in 3 death resulted from causes entire unconnected with the operation. The details of these 3 last cases were give —*Gaz. Med. de Paris*, Nov. 15, 1845.

49. *On Lithotrity as a means of removing stone from the bladder.* By Sir Phi Crampton, Bart., F. R. S., &c. &c.—If there is one subject more than another

which surgical opinion is divided, that subject is assuredly lithotrity. Where, I would ask, is the young practitioner, desirous of being on a level with the improvements of the age, and, at the same time, feeling the want of a guide for his practice, to seek for information on the subject? In the systematic works he will find the highest authorities in direct opposition to one another, not merely on matters of *opinion*, but on the *facts* on which those opinions must be based. If, turning from statistics which point to directly opposite conclusions, according to the views of the parties by which they are used, he endeavours to collect the opinions of practical men, his embarrassment is only increased, professed lithotritists, on the one hand, and hospital surgeons, on the other, taking very different views of the subject—the lithotritists maintaining that the new operation is applicable to almost every case of stone, is unattended with any considerable pain, and is *when properly performed*, quite devoid of danger—the hospital surgeons denying all this, and asserting that lithotrity is applicable to a very limited number of cases, that it is to the full as painful and far more fatal than cystotomy.

Now, when it is considered that lithotrity has been practised in a vast number of cases, both in Europe and America, for more than twenty years, it might be supposed that there were ample data to enable us to arrive at something like a conclusion as to the real value of the operation; unhappily, however, this is far from being the case, and the question as to which operation should be the rule, and which the exception, seems as far from being settled as ever.

Dupuytren, himself a celebrated cystotomist, and the inventor of the bilateral operation, was, as may be easily imagined, anything but friendly to the new operation. The cases successfully operated on in his presence, by M. Civiale, induced him to mitigate his sentence, but his hostility was not the less determined, and in his "Report" to the academy in 1831, he took so unfavourable a view of the subject, as induced the academy to withhold for another year the great prize which had been adjudged to Civiale for his discovery in the year 1827. This proceeding on the part of Dupuytren gave occasion for the celebrated letter addressed to him by Civiale, in which I am bound to say that the castigation—the most severe that, I think, is to be found in the whole circle of medical polemics—is scarcely more than the occasion justified.

As a mode of determining the relative value of the old and new operation, Dupuytren then suggested that a correct list should be made out of the total number of persons operated on by lithotrity and cystotomy within a certain period, and that a comparison should be made (upon equal numbers) of cures and deaths resulting from each mode of treatment respectively; and in this way he conceived that the question as to which operation should be considered as the rule, and which the exception, would be solved at once. M. Civiale at once accepted the proposal, and carried it out with an industry and ability which are above all praise: his tables presented to the academy contain no less than 5661 cases of calculus in the bladder, all classified and detailed with a degree of accuracy which has never before been attempted. But alas for human nature as well as for medical statistics! the humiliating truth remains to be told: each party affirms, and brings forward official documents to prove, that his adversary's lists of cures are not to be relied on. In France, it would appear (on the testimony of M. Amussat) that the statistics of operations are but too like the statistics of battles, each side diminishing the number of its own killed and wounded, and exaggerating the killed and wounded of the enemy. In justice, however, to M. Civiale, I am bound to say, that upon a careful and certainly unprejudiced examination of the whole controversy, the impression on my mind is, that the great "Inventor of Lithotrity," (I give him the title conferred on him by the Academy of Sciences) has not been quite fairly dealt with; and if all the charges brought against him have as little foundation as one which I am enabled of my own knowledge to refute, he must stand fully acquitted of misrepresenting the amount of his success. The late Mr. Henn, of Merion-square,—from whom Sir Astley Cooper had extracted some fragments of calculi by means of his forceps in the year 1824,—consulted M. Civiale in 1827, who ascertained, by sounding, the existence of several calculi in the bladder, complicated with extensive disease of that organ, and of the prostate: he dissuaded him from undergoing lithotrity or any other operation, at least under existing circumstances, and placed him under the care of Dr.

Morgan. Mr. Henn returned to Dublin, where he lived for several years, but never underwent *any* operation. At a sitting of the Royal Academy of Medicine, on the 3d of January, 1828, the name of Mr. Henn appears among the number of those who had been operated upon by M. Civiale, and had died of the operation!

Most unsettled, however, is the state of opinion *in this country* respecting the comparative value of lithotomy and lithotrity. Much of the prejudice which is entertained against lithotrity is founded on the exaggerations of professed lithotritists, whose interest it was to represent the operation which they exclusively practised as absolutely devoid of pain and danger, while the operation of cystotomy, as practised by hospital surgeons, was painted in the most terrible colours. The hospital surgeons, a few of whom enjoyed a monopoly of cystotomy, received, as they well might, with distrust, the glowing accounts of the successes of the new operation, and with anger and disgust what they considered as an exaggerated picture of the horrors of the old.

Hear M. Civiale's account of the operation of cystotomy, which, for power of description, is, I think, without a parallel:—

"The operation is rarely performed in the chamber occupied by the patient. On entering 'the operation room,' which he has been accustomed to consider as 'the place of his execution,' the sight of the raised and covered table, the crowd of assistants, the preparations, all suggest the idea of the scaffold, and are enough to carry terror into the stoutest heart; the terrible array of instruments, mysteriously concealed from his view, but ever present to his mind, the painful, but still more terrific posture in which he is placed on the table, the cords with which he is to be bound hand and foot, the shaving of the part on which the operation is to be performed,—all these circumstances, less serious in themselves than in the fears which they foment, fill the unfortunate sufferer's mind with terrors which increase every moment. Some, unable to support even the sight of so awful a spectacle, fall senseless on the ground; others, as happened lately in the hospital at Pavia, fly from the room, and absolutely refuse to submit to the operation. On his side, the surgeon is far from feeling at ease. 'Does he know, (observes Dechamps,) is he absolutely certain of what he has to do? Can he foresee all the obstacles that may present themselves? No doubt the rules are all clearly laid down, but their application is so subject to vary, that from this source alone the most insurmountable difficulties may result. The practice of the greatest surgeons is before us to attest the fact, and even in our own days we have a sufficient number of instances to convince us of the truth of it; hence it is that cystotomy has ever been, and must for ever remain, in the hands of a few surgeons, who often derive from their experience resources that genius and knowledge would fail to supply."—*Parallèle des divèrs Moyens de traiter les Calculeux.* Paris. 1836.

M. Civiale then proceeds to give three fatal cases of cystotomy, attended with the most terrible sufferings; one from his own practice, one from the practice o Covillard, and one from Dupuytren's. In one, (Covillard's,) "after two hours o the most horrible torments, during which several pairs of forceps were bent o broken, when the patient was so exhausted as to be able to utter only some feeble moans, and when his last breath was about to depart with the last drops of his blood, he was unbound and laid in bed, where he expired in the course of a hour." These terrible, but, I fear, not too highly-coloured details, though calculated to increase the horror in the public mind against cystotomy, are clearly chargeable, not to the operation, but to the operator. The cause of these disaster was the attempting an operation which was impracticable, from the great size o the stone; and the surgeon who, from culpable ignorance, committed the mistake should have been tried for manslaughter for persisting in it, "contrary," as Civial states, "to the urgent request of all the bystanders. But," he adds, "he was no to be dragged from the altar or from his victim." Such a scene, I rejoice to say at least within my time, has never been witnessed in this country.

The publication of such cases, however, was all in favour of the new operation The public, with mind pre-occupied and shocked by such details, hailed wit delight the announcement of an operation, "which," to use the expression o Baron Heurteloup, "was almost entirely free from danger and pain."

Now, strange as it may appear, I do not hesitate to say, and I am in a conditio to prove to you, that this is not too favourable a picture of lithotrity, *if the operatio* *be properly performed, and restricted to those cases which come within its proper domain;* but if applied generally to lithotrity, *as a substitute for cystotomy*, it is lamentably untrue. This, however, is a distinction which the public could not make, and the new operation was accordingly hailed by them as "a gift from heaven."

But it becomes the duty of every hospital surgeon who has availed himself of the opportunities which have presented themselves of performing the new as well as the old operation, to give the results of his practice to the profession, and that too in such a way as to leave no room for cavil as to his statistics. This can be done but in one way, and that is, to give a nominal list of *every patient* whom he has treated, stating the particulars of each case, the immediate results of the operation, and the actual state of the patient after an interval of many months, and, if possible, of years. The surgical profession and the public are under infinite obligations to Mr. Key, for having led the way in this true path of inquiry. Himself one of the most expert and successful of living lithotritists, he has studied the operation of lithotrity, and brought to its performance the most consummate skill, based on a most extensive experience. Following his example, I have determined to give, on the present occasion, the result of my personal experience in lithotomy and lithotrity, which extends over a period of upwards of forty years, during which time I have seen the operation performed, both in these countries and in France, by the most celebrated surgeons who have lived during the last half century, and I have myself operated on sixty-eight individuals,—on forty-nine by lithotomy, and on nineteen by lithotrity, and on two of these by a combined operation consisting of lithotrity and cystotomy, or rather, by what Mr. Willis calls lithectasy, that is, by opening the urethra at its membranous part, and dilating, but not dividing, the neck of the bladder, and extracting from the bladder the fragments of the calculus, which had previously been crushed by the lithotrite.

The origin of lithotrity, like the origin of many of the inventions which exercise the greatest influence on human happiness, is involved in darkness; but beyond all question, to Civiale is due the honour of having first constructed and successfully applied an instrument for the crushing or reducing to powder a stone in the bladder of a living man.

Four cases which came before my own eyes determined me to know something more of lithotrity. I therefore proceeded at once to London, and waited on Baron Heurteloup, to witness his mode of operating, with a view of practising it myself. He received me with the utmost liberality, and brought me to witness an operation on Admiral Cumberland. The operation was performed with Civiale's three-branch instrument, for the baron had not then employed his *percuteur a marteau.* Nothing could exceed the dexterity and skill, unless it be the gentleness, with which it was performed. I supplied myself with the instruments, and, after making some trials on the dead subject, I satisfied myself that the operation was applicable only to a very limited range of cases, and that even in the most dextrous hands it was likely to prove as dangerous as it was difficult. I determined, therefore, never to attempt it. The invention, however, of the two-branch *percuteur* changed the whole character of the operation, and with it changed my resolution, so I immediately procured one, and laid myself down to the study of it. Respecting the invention of this admirable instrument, conceding, as we are bound to do, to Civiale, if not the discovery, at all events the application of lithotrity, I would assign to Heurteloup the merit (scarcely inferior to that of Civiale) of having invented lithotripsy, that is to say, the seizing of the stone with a two-branch curved instrument, instead of a three-branch straight one, and reducing it to fragments by means of repeated blows of a hammer. This is the *percuteur courbe a marteau* of Heurteloup, and it is, beyond all comparison, the best instrument that has as yet been invented for pulverizing calculi in the bladder; and this is true, whether the effect be produced by percussion, when the branches are closed on the stone, by the blows of the hammer, or by compression, as when they are closed by the action of a screw. The best proof of the superiority of the *percuteur* to the three-branch instrument, is the fact that it is the instrument which is now exclusively employed by Civiale, and by every lithotritist in Europe and America. In justice to a most ingenious artist, it is but fair to state, that an instrument in all material points identical with the Baron Heurteloup's was invented by Mr. Weiss, of London, so early as the year 1824. Whether or not this instrument suggested the curved *percuteur* to the baron is more than I will decide. We have the evidence of Sir B. Brodie as to his having seen the instrument with Mr. Weiss in 1824.

To return to my narrative. Furnished with a *percuteur*, I had not long to wait for an opportunity of employing it. In February, 1834, a man named Doyle was admitted into the hospital with a small stone in the bladder; he was thirty-five years of age, and seemed in perfect health. When I told him that I intended to endeavour to remove the stone by breaking it up in his bladder, without cutting him, he seemed transported with joy. I then began by preparing a subject in such a way that I could look into the bladder while manipulating with the instrument: this can be done, when the anterior wall of the abdomen is removed, by cutting away the upper fundus of the bladder, and keeping the opening distended by stitching the cut edges to a ring of strong wire about three inches and a half in diameter. By practising on a subject so prepared, or even on a well-stuffed cushion, on the centre of which the calculus may be laid, you will soon discover a knack (which very few lithotritists have, so far as I know, as yet made public,) by which you can, while your eyes are closed, catch the calculus with certainty at the very first attempt.

After a few days' practice in this way, I performed the operation in the Meath Hospital, March 7th, 1834. The stone was seized, and broken by means of a small hammer; repeated on the 10th; the whole detritus discharged before the 14th; on the 18th the man returned to Waterford, and has had no return of his complaint. This is the first case in which lithotrity was performed in this country (Dublin); it is now more fully adopted, and its true value in course of being duly appreciated.

Now, what is the problem which lithotrity has to solve? It may (according to Civiale) be conveniently stated under the following heads:—

1st. The reducing of calculi within the bladder into fragments sufficiently small to be discharged or removed through the natural passage.

2dly. The effecting this by such means as shall excite no dangerous irritation in the urinary organs.

3dly. The freeing the bladder or urethra from the fragments which these organs may not have the power to expel.

To effect these objects, the instrument should combine a sufficient strength, with a form and dimension which will admit of its being passed through the urethra without exciting any considerable irritation: let us see how these desiderata are fulfilled by the instruments now in use. I need not detain you by a detailed description of various instruments, for all instruments are rendered obsolete by Heurteloup's or Weiss's curved *percuteur*.

The *percuteur* has undergone several alterations and some improvements, but I consider that the most important improvement is the provision for preventing the accumulation of detritus between the jaws of the instrument. I early perceived this great defect, and applied to one of the most ingenious mechanics that any country has produced, to remedy it, (the late Mr. Oldham.) The invention has been claimed by many, but here is the original instrument, made in 1834, which I have used ever since.

The preparation of the patient is general and special.

The general consists in light diet, abstinence from fermented liquors, free bowels without purging, the use of the hip-bath; if the urine be acid, administering alkalies combined with uva ursi or Peruvian bark, and Vichy water; mineral acids when the urine is alkaline, and the infusion of Pareira brava when there is mucous deposit; also absolute rest, with occasionally anodyne enemata.

The special preparation may be summed up under the heads of gradual dilatation of the urethra, when necessary; division of its orifice, when preternaturally contracted; and the frequent introduction of the catheter; on this latter I lay the greatest stress, as, if properly conducted, it allays the irritability of the urethra and the bladder. [Here the lecturer demonstrated the position of the patient on Heurteloup's bed, and proved that a fixed point in the instrument is not only unnecessary but dangerous. He also showed the mode of injecting the bladder, cautioning his hearers against the too rapid introduction of the fluid—more than one fatal case having arisen from this cause. In executing this manœuvre, the water should be so slowly introduced as to imitate, in some degree, its descent from the kidneys. The various steps of seizing the stone were gone through, as well as the removal of detritus from the bladder, by means of the lecturer's exhausting apparatus, and the mode of removing fragments from the urethra by cutting down upon them, as well as by means of Leroy's jointed curette.] So much, then, for the purely *mechanical* part of lithotrity, on the dextrous and delicate performance of which, much, no doubt, of the success will depend. In calculating, however, the probable *result* of the operation, there is a far more important element to be taken into account—namely, its proper adaptation to the case. If from a too exclusive admiration of lithotrity, founded on the exaggerated representations of some of its advocates, uncorrected by an extended experience, lithotrity be applied to a case to which it is inapplicable, and that properly comes within the province of cystotomy, the certainty is that the operation will fail, and the probability is that it will prove fatal; and to a certain, but not to so great an extent, the converse is true; if, for instance, lithotomy be performed on a person labouring under phthisis, extensive disease of the liver, or kidneys, it will certainly prove fatal. Such cases are not likely to succeed when treated by lithotrity; still they *may* succeed, and if the stone be small, and the bladder tolerably sound, the probability is that they will succeed, and life may not only be prolonged, but, what is scarcely less desirable, what remains of it may be spent in comparative freedom from pain. Again, if perineal cystotomy be attempted in a case where the size of the stone is so great that it either cannot be extracted through the lower opening of the pelvis at all, or without employing such violence as to render the operation almost certainly fatal, then lithotrity affords a means of relief, whether applied alone or in aid of cystotomy or lithectasy.

It appears, then, that cystotomy and lithotrity are not to be considered as rivals, and that the question, as to which of the operations should be the rule and which the exception, should never be brought into discussion; each operation has its special province, the boundaries of which (if, indeed, they admit of being fixed at all) can be determined only by a comparison of a vast collection of facts, carefully noted, and, above all, faithfully reported, and properly authenticated.

If we look to the state of professional opinion in France, we find M. Velpeau, the most able, eloquent, and determined opponent of lithotrity, admits, that in cases of small stones, and even of large ones, if they be friable, and the bladder and its appendages be healthy, lithotrity is the preferable operation; but in all cases of children under fifteen years of age, and even in adults, where the stone exceeds in volume a small nut, and is of excessive hardness, and when the urinary organs are in a state of disease, as evinced by catarrh of the bladder, contracted or irritable urethra, then he would prefer lithotomy. Amussat, Lisfranc, Dubois, and Leroy, on the contrary, are vehement supporters of lithotrity; they would apply it to almost every case admitting of any operation, even to children and infants. M. Civiale, however, though sufficiently partial to what may fairly be called his own operation, is far from applying it indiscriminately. Now, what is the state of opinion on this subject in England?

Sir B. Brodie's opinions are recorded in his lectures on the diseases of the urinary organs. "You should be made acquainted," says this sagacious practitioner, "with the unfavourable circumstances which may attend on this mode of treatment; but you are not to suppose that it often happens that these exist to any considerable extent. The new operation often presents great advantages over lithotomy. It would be a great error to represent it as preferable on all occasions, but it is so in a great many instances."

Mr. Liston, himself one of the most distinguished and successful lithotomists in Europe, is, naturally enough, strongly prepossessed in favour of an operation in which he so much excels. His opinion of lithotrity is, therefore, far less favourable than Sir B. Brodie's. He is not so sanguine "as to suppose that the breaking up of the stone in the bladder will ever entirely supersede lithotomy. If, by some miraculous interposition of Providence, the deposits from the urine should uniformly be pulverizable, and that bladders be made of less irritable stuff than they are, and if, above all, the affected individuals could only be prevailed upon to apply in due time, then might such pleasant anticipations be entertained, and then might we, with some reason, hope to see them realized; but as matters now are, urinary concretions must, in a great many instances, be cut out of the bladder. Nor is it a circumstance to be very much deplored, since, in good hands, the patient neither endures so much suffering, nor incurs so much risk, as by the proceedings already detailed. The cure, besides, is far less tedious. The stone-grinders, whilst they conceal their own unfortunate results, endeavour to depreciate lithotomy by blazoning abroad the practice of some unlucky surgeon, who, perhaps, loses four in twelve, or six in twelve, of the patients who come under his knife." Mr. Liston acknowledges that now "the screw lithotrite can with great propriety and safety be employed in cases in which the concretion has not attained any very large size, and in which also the urinary apparatus is healthy, and tolerably free from irritability. The cases for this operation must be well chosen, and the proceedings conducted throughout with great caution, gentleness, and judgment."

The last book which has been published on the subject is the work of a well-informed physician—Dr. Willis. It is altogether opposed to the opinion and practice of Sir B. Brodie, and of several other hospital surgeons of high reputation, and particularly of Mr. White, of the Westminster Hospital. The *author* does not, I believe, draw from any fund of considerable personal experience. Speaking of the supersedence of the cutting operation, he says, "Such a substitute was, in its first introduction, and for some considerable time afterwards, believed to have been discovered in lithotrity. But this is beyond all question a rotten staff, which, leaned upon by all who suffer from stone, will certainly fail five-sixths of the number; nearly one-half will find that it is totally inapplicable to their case; from one-third to one-fourth will fall immediate victims to its determined application; and from one-third to one-fourth will escape, to lead miserable lives from diseased bladder, and then die of diseased kidneys: not more than one in three or four of all who were held favourable subjects will find it a safe, effectual, and final remedy for their disease. The public and professional mind has been singularly abused in regard to the value of lithotrity, as a general means of treating stone in the bladder." This is a terrible picture; nevertheless, I believe, if applied to lithotrity, considered and *employed* as a *substitute* for lithotomy, it is not too highly coloured. Dr. Willis supports his opinion by a reference to what he considers as *authentic* documents, (for when *unfavourable* to the operators, and given by themselves, they may be safely so considered.) From a great number of unsuccessful instances, collected from various authentic sources, Dr. Willis arrives at this conclusion respecting the circumstances in which lithotrity is admissible, and those in which it is inadmissible. "Lithotrity," he says, "is admissible, *and only admissible*, in cases in which the bladder is perfectly healthy, and in which the stone is small, of the size of a filbert, a shelled almond, or it may be a nutmeg at the utmost; under all other circumstances, it ought to be held impracticable. In other words, lithotrity is admissible where it is estimated that the stone can, at one sitting, be seized and reduced to fragments of sufficient minuteness to be passed by the urethra. No second, certainly no third operation ought ever to be contemplated; *if the patient who has had lithotrity performed on him is not relieved at once, he is in imminent danger of losing his life.* Lithotrity, I do not hesitate to say it, has now been fairly tried, and found wanting as a general means of relief for stone. Restricted to the circumstances just indicated, it is a great addition to our chirurgical therapeia; applied indiscriminately, and as a substitute for lithotomy, and all other means of dealing with stone in the bladder, it is a most fatal present made to humanity." But Dr. Willis draws his conclusion from documents which have reference chiefly, if not altogether, to the original operation with the three-branch instrument, and the drill, as first practised by Civiale; though even then, his picture is too highly coloured; but if applied to the operation as *now* performed with Heurteloup's *percuteur*, it is far from being a correct representation of lithotrity; and this I am in a condition to prove upon evidence which I am not afraid to say is the most exact that has as yet been offered on any disputed point of surgical practice. I propose to take the last eleven years, and to give every case of stone in the bladder on which I was consulted during that time, the particulars of each case, including the operation (if any) which was performed for its relief, and the issue up to this day, constituting a catalogue *raisonné* of all the cases, whether treated by lithotrity or cystotomy.

From May, 1834, to September, 1845, I have had to deal with thirty-five cases, of which four were females, and twenty-nine were males, all adults, excepting two boys. They have been disposed of in the following way:—

Rev. G. Ouseley, not operated on, on account of his great age, and the diseased state of the prostate. Four were sent to be operated on by Baron Heurteloup, and three of them were permanently cured. The fourth was operated on three times by him within six months, and twice by me within twelve months; for the last time, four years before his death. He died, aged 76, free from urinary complaint. The detritus was removed (as before stated) by means of the exhausted ball. To this complete removal of the particles I attribute the immunity from relapse during the last four years of his life.

[The lecturer then gives a list of "his own cases," twenty in number, on which lithotrity was performed, and that account is followed by his cases of lithotomy, nine in number, concluding them with the following summary.]

It would appear, then, that the thirty-five cases of stone in the bladder which have applied to me for relief between March, 1834, and November, 1845, have been disposed of in the following way:—

Two (the Rev. G. Ouseley, aged eighty-one, and a gentleman at Coolock) were set aside as unfit for any operation—both had diseased bladder and kidneys; four were sent to Baron Heurteloup, and were cured by lithotrity; twenty were operated on by me, (by lithotrity,) all adults; and nine by cystotomy, three under twelve years of age. Total, 35.

All that were operated on by *lithotrity* were cured, with the exception of one, and in his case the operation cannot be said to have failed, because it was performed expressly to bring the stone into a condition to be removed by lithotomy, and this the operation fully effected. In another case, the cure was not completed, from causes that had no reference to the operation.

All that were operated on by *cystotomy* recovered, though one died three months afterwards of old inflammation of the kidney and testicle; but the wound had nearly healed.

It appears, then, that of the thirty-three patients operated upon, nine only were submitted to cystotomy, (about one-fourth;) it is not, however, to be inferred, that out of any given number of cases of calculus, only one-fourth should be operated on by cystotomy; for if ten or twelve of the twenty-four operated on by lithotrity, instead of being adults, were children and old persons, the proportions might probably be reversed, and the cases suitable to lithotrity might be reduced to ten or twelve, and the difference placed to the credit of cystotomy. And this affords a striking illustration of the utter uselessness (not to say the absolute mischief) of drawing any inference favourable or unfavourable to lithotrity, from a statement of the mere *numbers* operated on, without reference to the *circumstances* of each particular case. The numbers of cases that I have given (I admit) are far from being sufficient to justify any general conclusion as to the respective values of the old and new operations, but they are sufficient to establish some points of great practical importance upon which surgical opinion is still much divided. 1st. It is abundantly proved that lithotrity may be successfully applied to cases which are considered to be beyond the domain of cystotomy. I believe the most intrepid cystotomist would have hesitated (if he did not at once refuse) to operate by cystotomy in four of the cases I have quoted, for it is nearly certain that it would have proved fatal. Another patient, aged sixty-eight, and weighing sixteen stone, would have been a very unfavourable case for cystotomy; he was, however, relieved of his stone (a very large one) by lithotrity, without suffering one hour's confinement. 2dly. In certain cases, to which neither cystotomy nor lithotrity are applicable singly, (as two of my cases proved,) the combination of the two operations (and especially of lithotrity with lithectasy) may be employed with success. Finally, it is proved that when the urinary organs are in a healthy state, stones of great hardness, and upwards of an inch and a half in diameter, may be removed by lithotrity with safety. It by no means follows, however, that, in such cases, lithotrity is *always* to be preferred to cystotomy; the choice of the operation must often be determined by various considerations (not purely surgical) connected with each particular case, and having reference to the operator as well as to the patient. A very skillful cystotomist may not have sufficiently practised lithotrity, and a patient who might make up his mind to suffer one operation, however painful, might be quite unequal to submit to several comparatively slight ones.

But the important question still remains to be determined—a question upon which the cases I have just detailed throw no sort of light—namely, what circumstances forbid lithotrity? It may be stated, as a general fact, that in calculous patients the bladder is not unfrequently found in one of two opposite states, which, if they do not absolutely forbid lithotrity, render its application in the highest degree dangerous, and (as a remedial means) far inferior to cystotomy. The bladder, like the stomach and the heart, has not inaptly been termed a "hollow muscle," which is constantly receiving and transmitting a fluid; like the heart, it is liable to hypertrophy, or thickening of its walls, diminution of its capacities, and increased irritability, or power of contraction; like the heart, too, it is subject to a thinning of its walls, an increase of its capacity, and a diminution of its contractile power: these opposite conditions are easily recognized, and are familiar to every surgeon of experience; but to M. Civiale is due the merit of having shown the influence which these states of the bladder exercise on the success of lithotrity. In the hypertrophied bladder, the patient is harassed by the almost incessant desire to pass water; the quantity discharged seldom exceeds an ounce, or an ounce and a half; the pain, especially in expelling the last drops, is excessive; the urine is always high-coloured, and deposits, on cooling, a mucous sediment, frequently tinged with blood. In such a case, the mere operation of sounding, or even of injecting warm water into the bladder, may excite a severe or even fatal inflammation of the organ. I have knowledge of two cases in which the injection of tepid water into the bladder (though done with the utmost care) proved fatal in three days, by exciting acute inflammation of that organ; on examination after death, the mucous membrane was found inflamed, thickened, and corrugated. In such a state of the bladder, it is scarcely necessary to say that lithotrity is not to be thought of.

The opposite state, in which there is atrophy or wasting of the walls of the viscus, with increase of its capacity (M. Civiale justly observes). exercises a great influence on the sensations which are caused by a calculus as well as upon the manœuvre of the operation, and on its result; it masks all the symptoms of stone, or renders them different from those we are accustomed to observe. As the bladder never empties itself completely, its walls scarcely come in contact with the stone; the consequence is, that the pain and the peculiar sensation in expelling the last portion of the urine (the most certain of the *rational* symptoms of stone) are wanting. Exercise does not cause those bleedings from the bladder, and those painful spasms, of which calculous patients, under other circumstances, complain so much; the urine is loaded, fœtid, and alkaline, the debility increases daily, the pulse is quick and weak, and there are frequent chills, followed by heat flushes—the bladder is in a state of low inflammation, with diminished vital powers, and the kidneys generally participate in the disease. In such a state of things, M. Civiale justly considers that the operation of lithotrity would almost certainly prove fatal; but I believe the same might be said, with equal truth, of cystotomy. He thinks it of so much importance, with reference to lithotrity, that this condition of the bladder should be clearly understood, that, in addition to the signs above mentioned, he gives several others that are deserving of the utmost attention. This morbid thinning and atony of the walls of the bladder must not be confounded with paralysis, or want of action from defect of innervation; this last state furnishes no objection to the application of lithotrity, provided sufficient means be employed to rid the bladder of the fragments of the broken calculus. This is well illustrated by one of my own cases, where the bladder was so completely paralyzed, that for several years the patient had been obliged to draw off the urine by the catheter four or five times in the day.

In addition to the morbid states of the bladder described by M. Civiale, I should say that a contracted and irritable urethra, an enlarged and irritable prostate gland, and, above all, a constitution prone to sympathize with a disordered state of the urinary organs in general, and with the urethra in particular, a large and very hard stone, or numerous small ones, forbid the application of lithotrity, and bring the case within the proper domain of cystotomy.

Lithotrity is in general considered as inapplicable to children under fifteen or sixteen years of age, on account of the narrowness of the urethra in early life, and the comparative safety of cystotomy in young subjects; but considering that in children the urethra is (except at its external orifice) highly dilatable, and that the most violent symptoms of calculus in the bladder are often created by the presence of a stone so small that it might with the greatest facility be crushed, and the fragments extracted, at a single operation, I cannot but hope, that at no distant period the operation of cystotomy will be superseded by lithotrity, in a great proportion of cases of calculus in children. I think that these four calculi [showing them] which I have extracted from infants under six years of age, are the last of the kind that I shall either extract or see extracted by that painful and dangerous operation. But a few days since, Mr. Cusack performed cystotomy on a child of four years of age, in Steevens' Hospital; the moment he divided the membranous part of the urethra, the stone started out into the external incision, and was removed by the fingers of the operator; only the membranous part of the urethra had been opened; the prostate and bladder were untouched. What a triumph it would have been for lithotrity, and what an advancement in operative surgery, if lithotrity had been applied to this case. The bladder not having been opened, the wound was healed in three or four days, and the child was perfectly cured. Nevertheless, it is impossible not to regret, for the sake of the advancement of operative surgery, which is immeasurably improved by everything that renders operations more safe and less painful, that lithotrity had not the merit of this cure.—*Dublin Quarterly Journ. of Med. Sci.*, Feb. 1846.

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50. *Ovarian Dropsy, followed by recovery.*—Mr. R. Eager records in the *Lancet* (Feb. 28) a case of ovarian dropsy, in which the patient had attained the size of a woman at the full period of gestation, the ovarian tumour occupying the abdominal cavity from the pubes to the ensiform cartilage, producing great inconvenience and distress by its pressure on the diaphragm and surrounding viscera, and tapping was regarded as the only probable means of affording relief.

On the 13th November, a purgative was given to relieve constipated bowels—it induced most distressing and violent vomiting, succeeded by rigors and syncope. On the following day a marked change had occurred in her size and form; and, to adopt her own expression,—"She felt a sense of want, sinking, and emptiness, almost amounting to fainting." Early on the morning of the 15th November, Mr. E. was called to her, and found her suffering from all the symptoms of subacute peritonitis, which readily yielded to the usual treatment. On the 17th November a very careful and minute examination of the abdomen failed to detect a vestige of ovarian enlargement, but the whole belly was augmented in size, and over its most dependent parts a very distinct sense of fluctuation was communicated to the hand by percussion. On this day her circumference over the umbilicus was thirty-eight and a half inches. During three or four days subsequent to this date, she evacuated large quantities of urine, to the amount of four, five, and six quarts per diem. On the 22d November her size by admeasurement was reduced to twenty-seven inches, with no perceptible enlargement or fluctuation. From the above time no remarkable symptoms have presented themselves, although her convalescence has been retarded by extreme debility:—this has, however, at length yielded to a generous diet, change of air, and a course of "steel bitter" medicine. She now feels better than at any time during the past four years.

Mr. Eager is induced to believe that the ovarian cyst was ruptured by the violent efforts to vomit on the 13th Nov., that the contents of the sac were extravasated into the abdominal cavity, (producing the attack of peritonitis,) whence they were removed by absorption, the cyst itself remaining in a collapsed and contracted state.

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51. *Ovarian Cysts—Paracentesis* 128 *times.*—Dr. Kirkpatrick exhibited to the Pathological Society of Dublin, Jan. 10th, 1846, the ovaries of a patient who had been a constant patient at the Whitworth and Richmond hospitals during the last five-and-twenty years. She laboured under an ovarian dropsy of immense size, for which she had been tapped 128 times. Her husband was a soldier named Green, whom she had accompanied during the Peninsular War, when she had

been exposed to much fatigue and cold. Soon after her return she was first attacked with this disease, which existed and continued increasing for four years before she was tapped, since which time the operation was performed, on an average, once every six weeks.

Since the opening of the North Union Workhouse, she had been an inmate of that establishment, and was operated on by Dr. Kirkpatrick 47 times, a large bucketful of fluid being removed at each operation.

The fluid was usually thin, serous, and highly coagulable; on one occasion it had a milky appearance, and on another was tinged with blood. The day following each operation, she was always attacked with symptoms resembling peritonitis, viz., great abdominal tenderness, small and rapid pulse, and extremely anxious countenance; but these symptoms yielded to the free administration of opium. She died of an attack of pleuritis, the interval between the last operation and her death being eight weeks. The left ovary was chiefly affected; in it were three cysts: one of considerable size, that which had been so frequently tapped; the other two were developed in its walls; that on the right side was the size of a small melon, and, no doubt, had been the cause of a failure which occurred in the operation whenever that side of the abdomen was selected for the place of the puncture, the fluid suddenly ceasing when a certain quantity had flowed away. A cyst about the size of an orange also existed in the right ovary. The entire tumour was easily removed, the adhesions being slight and the pedicle by which it was connected to the uterus exceedingly narrow. The uterus itself was free from disease, and the abdominal viscera healthy. In the chest were observed the effects of the pleuritis which had caused her death, but both heart and lungs were sound.

This case is most interesting, from the circumstance of an operation having been so frequently performed without bad results. The statistics of this operation show that it is very often followed by fatal consequences. In a table of cases lately collected by Dr. Churchill, 14 cases out of 20 died within nine months after the first tapping.—*Dublin Hospital Gazette*, Feb. 1, 1846.

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52. *Mode of Curing Obstinate Ulcers.* By J. Bresciani de Borsa.—When I have met with very old ulcers, especially those of the leg, which resist every other method of treatment, I have obtained their sound cicatrization by instituting, by means of caustic potass, a new ulcer in the vicinity. I make in a piece of adhesive plaster a hole, somewhat smaller in size than I wish the artificial ulcer to be, and then apply it at one or two fingers' breadth from the old sore. Caustic potass is rubbed on this space until an eschar is formed; and I have constantly observed that during the consequent inflammatory and suppurative processes, the old solution of continuity, which had so obstinately resisted treatment, has closed up, and the cicatrix has in general continued sound.

"If the healed ulcers had resulted from a disordered constitution, to the appropriate internal treatment, I add either an issue in some usual spot, or place a small portion of wax in the artificial ulcer itself when nearly healed, so as to convert it into a common issue, which contributes much to efficient treatment, as by such prudential precaution I have never seen any mischief produced in the constitution of those who had long been subject to obstinate ulcers. If the ulcer was produced by a traumatic cause, after it has become healed, the artificial one may also be cicatrized as soon as possible without any injury resulting.

"In my practice I have cured more than a hundred cases in this manner, and many instances have occurred in the hospital where I have cured ulcers of twenty or thirty years' standing."—*Med. Chirurg. Rev.*, April, 1846, from *Saggi di Chirurgia Teorico-Pratica.*

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53. *Death from Puncture of the Membrana Tympani for the cure of Deafness.* (*Dublin Med. Press*, April 1, 1846.)—Dr. Butcher read to the Surgical Society of Ireland, (March 21, last,) a very interesting paper on puncturing the membrana tympani, in which he related two well marked examples of loss of life following this operation.

The first was the case of a young woman who was deaf in both ears for four years. Prior to this period she got a severe cold, with swelling of all the glands round the neck. So complete was the deafness, that she could not distinguish between the loudest noises. Catheterism of the Eustachian tube was performed and said to fail. Hence it was agreed upon that the membrane of the tympanum should be pierced, which was done, a small piece being drilted out of the membrane of the right side. Immediately after the operation the hearing was greatly improved. Next day intense pain was experienced in the ear. Suitable remedies were applied, and in forty-eight hours a profuse discharge took place from the ear. This varied much in quantity, day after day, for two months, all the time the hearing being slightly benefited. In eleven weeks after the operation the patient became more deaf than ever, and was constantly complaining of flying pains through the head; at one time fixing in the forehead for a few hours, at another in the occiput, and frequently in the temple, particularly in the right ear; at times not exceeding a dull heavy weight, but at others aggravated to the greatest torture. In this state she continued, one day better, another worse, for four months, when she was attacked with rigors, rapid pulse, intolerance of light, and all the symptoms of disease in the brain, after which she died on the third day.

On examination after death, an abscess was found in the lower part of the middle lobe of the brain. No opening could be detected through the petrous portion of the temporal bone, but the dura mater covering it was roughened on the surface, and softened in its texture, particularly near the internal auditory foramen. The membrana tympani was entirely destroyed, and the lining membrane of the tympanum was considerably thickened and villous on its surface.

The following case is far more interesting. It is that of a young man, ætat. 20. He complained of deafness in the right ear twelve months prior to his death. Having gone to a surgeon in this city, he had his tympanum pierced. At first his hearing was slightly improved, but in three weeks after it relapsed as bad as before; but from this period he had superadded periodic attacks of headache, loud noises being particularly troublesome to him; always a dull heavy pain in the affected ear, which at some periods became most excruciating; ultimately general indisposition set in, restless nights, loss of appetite, those periodic headaches, rambling with greater or less intensity to various parts of the head, together with an unaccountable lassitude, marked his history up to a fortnight previous to his death, when he was seized with rigors and all the symptoms of fever. An eminent surgeon in this city was then called in. The head symptoms all through were most alarming, and though treated most energetically, the symptoms gained ground, and he died. I was asked by the surgeon in attendance to make an examination of the head. The following are the appearances which presented themselves. The pia mater was exceedingly vascular. On cutting into the ventricles, at least six ounces of thin straw-coloured fluid was contained in them. There was softening of the septum lucidum, the thin and thread-like bands of the white structure floating in the fluid; the dura mater and pia mater towards the middle fossa of the right side of the base of the skull was far more vascular than elsewhere, and on lifting up with great care the middle lobe of the right hemisphere of the brain, a streaking of purulent matter of healthy character was found communicating with an abscess about the size of a small walnut, in the anterior part of the right lobe of the cerebellum. The briny matter all round this abscess was rendered very firm. The dura mater covering the upper and under surface of the petrous portion of the temporal bone was much thickened and roughened on its surface. A small tumour about the size of a bean lay on the auditory portion of the seventh pair of nerves. I had not an opportunity of examining the bony structure of the ear, the patient being in the better class of society. The *rationale* of these cases is plain; inflammation attacked the tympanum after the operation, and was transmitted to the brain.

Professor Jacob expressed his belief that numerous instances of a similar kind have occurred as the consequence of putting this operation in practice where it need not and should not have been resorted to. Persons are in the habit, he observed, of performing the operation, well knowing that whatever relief is obtained, is solely of a temporary character. It was unquestionable, in fact, he said, that it is often done merely as a means of obtaining a certain amount of celebrity from this temporary enjoyment of hearing; in the same way that the itinerant oculists were in the habit formerly of going about performing the operation of couching, and acquiring celebrity from the temporary restoration of sight, caused by the removal of the opaque lens from the axis of vision; never waiting in any town long enough for the inflammatory action to set in, which most frequently terminated in total blindness. The cases recorded by Sir A. Cooper in which this operation was performed by him, and their results were, Professor Jacob observed, not many: but though Sir Astley did perform the operation frequently, he did it in a very delicate manner, by merely passing the sharp end of a common silver probe in and out of the membrane. Dr. Jacob had himself seen him perform the operation. Sir Astley used at the same time to state to the students that the improvement produced would be merely temporary. The introduction of the practice had nevertheless been the source of considerable celebrity to Sir A. Cooper, who received the Copley medal for his communication, published in the Philosophical Transactions, though before a year had elapsed it was found that the operation was by no means attended with the success that was generally anticipated; at the same time it is, as he had already observed, very generally practised by men who grasp at the credit so obtained for the time, regardless of the consequences and the sacrifices made to obtain a celebrity so unenviable.

OPHTHALMOLOGY.

54. *Melanosis of the Eye.* By W. Lawrence, Esq., (*Lond. Med. Gaz.*, Oct. 3, 1845.)—In a clinical lecture delivered at St. Bartholomew's Hospital, Mr. Lawrence has made some interesting remarks on melanosis of the eye, and related two cases, the most important points in relation to which we shall present to our readers.

Case I.—*Melanosis of the left eye—Extirpation of the globe at an early period—Death in three years and three-quarters after the operation, from secondary disease of the liver, pancreas, ovaries, and other parts.*—Elizabeth Rute, a female of rather stout frame, and healthy appearance, who had always enjoyed good health, was admitted into St. Bartholomew's, Oct. 7, 1841, as a venereal patient, on account of superficial ulcerations and mucous tubercles of the external organs. She said that her age was 20, but she was probably two or three years older.

A few days afterwards, she called my attention to the state of her left eye, of which she had made no complaint at the time of admission. It was red, watering, and painful, and presented serious changes in the state of the iris and lens. It appeared, on inquiry, that six months ago, without previous suffering, she had discovered accidentally that she was blind on that side. She experienced no inconvenience, until three months after, when pain came on in paroxysms so severe as to induce her to become out-patient at the Ophthalmic Hospital in Moorfields. She discontinued her attendance after two months, in consequence of her confinement, during which time the paroxysms were less frequent and severe.

We found the conjunctival vessels, and those of the sclerotica slightly injected; the cornea transparent; the iris dark-coloured, dull, and motionless; the pupils widely dilated; the crystaline lens of a dull dingy hue: both iris and lens were in contact with the cornea. Three small staphylomatous projections, one above and two below the middle of the globe, occupied the outer part of the sclerotica, close to the edge of the cornea. Large tortuous vessels of venous character ran over the two lower. Vision was totally lost; there was constant pain, which was occasionally very severe. The suspicion of melanosis immediately occurred to my mind. The presence of a morbid growth in the back of the globe would account satisfactorily for the changes of appearance and position in the iris, pupil, and lens, as well as for the partial absorption of the sclerotica. Leeches were applied three times to the left temple, with benefit; but the pain was not entirely removed.

As the appearances above described might be accounted for by the formation of fluid within the globe, although I did not think it probable, I punctured one of the staphylomatous projections with a grooved needle. No fluid escaped. Entertaining no further doubt respecting the nature of the complaint, I explained to the patient the necessity of the operation, to which she readily consented. The globe was extirpated on the 23d of October, the lids being separated by a free incision at the external commissure, and turned backwards, so as to expose fully the front of the orbit, and the posterior connections being divided as far back as could be accomplished conveniently.

Examination of the eye.—The globe, not unnaturally soft, was divided through the centre. There was no trace of vitreous humour; a dark and blackish mass, of soft consistence, occupied nearly the whole interior of the globe, pressing the retina, which was healthy and formed a flattened mass, towards its inner side, and the crystaline lens, which was semi-transparent, against the posterior surface of the cornea. During the examination, the diseased mass dropped out from one-half of the section, leaving the inner surface of the sclerotica smooth, but slightly darkened in colour. In that part of the globe which was occupied by the diseased mass there was no trace of choroid membrane, and the growth therefore filled the space between the sclerotica and the retina, which was folded into a small compass. That portion of the sclerotica towards which the retina was pressed was lined by healthy choroid. The optic nerve was healthy. The eye is preserved in the museum of the hospital.

There was but little subsequent bleeding; no vessels were tied. Four hours after, she had cold chills, and vomited several times.

[The patient passed a restless night, and the next morning the lids were distended, apparently by effusion of blood into the orbit. On the 4th Nov., she had a severe attack of erysipelas commencing on the face and extending to the scalp and upper part of the neck, which persisted for ten days; after which she convalesced, and on Dec. 6 she was discharged.

From this time performed the duties of a house-servant, and remained well until the latter end of 1844, when she called upon Mr. Lawrence, complaining of pain and fullness in the abdomen. Suspecting that internal disease was forming, Mr. L. advised her to come into the hospital. The following is the report of her condition on Dec. 12th:—"There is a small swelling on the right side of the navel, covered by healthy skin, of which the appearance is slightly altered by the dark colour of the subjacent growth. There is general fullness of the abdomen in the right side and upper part. The liver is enlarged and uneven on the surface, extending below the margin of the chest. Towards the confines of the lumbar and iliac regions, there is a tumour on each side, somewhat movable, of indefinite size and extent. Pain is experienced occasionally. The several functions of the body are performed naturally, but she sleeps badly."

The disease made rapid progress. The abdomen enlarged so that by the middle of February it equalled in size that of a woman at the full period of utero gestation. Pains were occasionally felt in the head and abdomen. Eventually purging of blood took place, at times in considerable quantity. The patient died on the 6th of June. Mr. Coote gives the following account of the post-mortem appearances:]

There were two or three small black tumours in the scalp; the scull-cap, thicker and heavier than natural, contained in the diploë similar deposits, each about the size of a large pea. Black matter was found about the optic foramen, in the lesser ala of the sphenoid bone, and along the inferior margin of the left orbit. The bony substance was not swelled, nor apparently altered in structure, in the situation of these deposits.

The brain was healthy; there was a small black spot lying upon the surface of the anterior cerebral lobes under the pia mater. The left optic nerve, from the orbit up to the commissure, was shrunk into a slender membranous chord, without trace of nervous matter; the state of atrophy was continued in a slighter degree along the right, or opposite optic tract, into the optic thalamus.

There were five dark-coloured spherical tumours, about the size of nuts, visible through the integuments of the chest, situated chiefly about the right mamma. Three similar tumours were noticed under the integuments of the abdomen; they were loose and seated in the cellular tissue; some were firm and black, others of a brownish hue, consisting of thick fluid contained in a cyst.

Black matter was deposited in the cancellous texture of some of the left ribs; a mass of black matter the size of a musket-bullet was lodged upon the anterior surface of the dorsal vertebræ. The lungs were healthy.

There were numerous black tumours upon the outer and inner surface, and in the muscular substance of the heart; two of considerable size projected into the cavity of the left ventricle.

The liver, enormously enlarged, seventeen and a half pounds in weight, occupied the greater part of the abdominal cavity; although much of the surface presented the natural colour, consistence, and organization of the hepatic substance, the enlarged gland consisted principally of a morbid deposit, in larger or smaller masses, which occupied the entire thickness of the organ, and projected from the surface in rounded tubercles of various magnitude and generally of black colour. In the interior the colour varied from a deep black to a light yellowish-brown. The consistence varied; it was generally softish, so as to break down under the pressure of the finger. When passed over paper, linen, or the skin, a black or brownish colouring matter was left behind; the morbid substance was contained in a kind of cyst, from which it could be turned out. The larger masses presented a kind of slight lobular arrangement on section.

The gall-bladder was healthy, and contained bile.

Upon the mucous membrane of the jejunum were seen several small black patches; larger patches were found in the fold of the mesentery, and on the peritoneal covering of the pancreas.

The pancreas was filled with numerous deep black deposits of irregular form, some as large as a musket-bullet.

Smaller deposits were found in the kidneys; two cysts resembling in size and shape the human testicle, each containing a mass of black matter, were attache to the right kidney.—The uterus was healthy.

The ovaries were greatly enlarged and converted into irregular lobulated masses about eight inches in length, which retained no trace of natural structure; each o these masses consisted of a thin but dense cyst, filled with melanotic structure o soft consistence, and of the deepest black colour. The ovaries with the uterus ar preserved in the Museum of the Royal College of Surgeons of England.

Some minute black spots were seen upon the mucous membrane of the vagina near the os tincæ.

The blood-vessels were healthy.

Under the microscope this morbid deposit was found to be composed of irregularly shaped cells, of larger size than in common medullary disease, and containing dark granules, varying in quantity according to the colour of the part.

In those parts which were soft, and brownish in colour, the cells had given way and allowed the granules to escape. The granules had everywhere a kind molecular movement.

Case II.—*Melanosis of the right eye—Extirpation of the globe—Death at the end six months from melanotic disease within the cranium.*—Sarah Keeble, æt. 43, marrie of spare habit and swarthy complexion, but of healthy family, and the mother six healthy children, never suffered from any illness until two years ago, wher without obvious cause, the right eye became inflamed, the lids swelled, and visio was lost. The inflammation subsided readily under proper treatment, but th sight did not return. Her friends, however, remarked that the eye had a mor bright and glistening appearance than the other, and seemed the best of the tw About nine months ago, she had severe pain in the globe, which induced her examine it in a glass, and on raising the upper lid, she discovered a black spot i the white part. This slowly increased, and projected slightly till about eig weeks since, when it grew more rapidly, pushing the eye downwards behind th lower lid. For three months after the discovery of the black spot she was fre from pain, but it then occurred in paroxysms, increasing in frequency and bein particularly severe at night. Yesterday (Jan. 9th) the tumour began to bleed.

Jan. 10th, 1845.—There is a dark-coloured tumour, the size of a walnut, wit four black tubercular prominences, protruding from the upper part of the right ey partially covered by the upper lid, which is stretched over it, and rests in a groo on its upper surface. The portion exterior to the lids, directed outwards, is ulce ated, and bleeds freely when touched. In every other part the conjunctiva entire, but its vessels are large and tortuous. The development of this tumo above the eye has pushed the globe downwards and outwards. When the li are separated by voluntary effort, the palpebral aperture is entirely occupied the morbid growth. On depressing the lower lid, the cornea is brought into view quite transparent, but pushed down to the very lowest part of the orbit. The iris is unaltered and pressed against the cornea, together with the lens, which is discoloured and opaque. Vision in the opposite eye is perfect; appetite good: no disease is apparent in any other part. The history of the case, with the appearances just detailed, left no doubt that melanotic disease had formed within the eye, and had made its way through the coats at the upper part of the organ, so as to constitute the dark tumour which projected between the lids. Extirpation of the diseased organ offered the only prospect of benefit.

Jan. 11th.—The operation was performed in the usual manner. There was some trouble in separating the upper lid, which was tightly stretched over the tumour, but the globe was satisfactorily removed. The cut surface of the optic nerve presented a dark discoloration in slender streaks; as it had been cut through close to the sclerotica, it was thought advisable to take out another portion. Some discoloration was noticed in the situation of the second division. There was no bleeding of consequence; no vessels were tied; wet lint was placed over the orbit, and the patient was carried to bed.

Upon making a vertical section of the eye and tumour, it was found that a morbid growth of soft consistence, brownish in colour, with black portions interspersed, had proceeded from between the sclerotica and choroid in front of the optic nerve, and pushing forwards the iris, which was healthy, and the lens which was opaque, against the cornea, had made its way through the upper part of the sclerotica, just behind the ciliary ligament, and formed a tumour the size of a walnut, covered by conjunctiva. A shred of retina was discovered among some loose fibrous substance. No trace of choroid was seen, nor of vitreous humour, although the morbid growth did not fill the interior of the globe.

No unfavourable symptom occurred after the operation. The swelling of the lids subsided when suppuration was established; the wound healed, and she was discharged in perfect health on Feb. 3d. The unfavourable result of the case, however, is apparent from this portion of the brain, which has been forwarded to us by Mr. S. Freeman of Stowmarket, the gentleman who attended her at the time of her death, which took place in the early part of this month (July), after a few days' illness. Within a week of her decease she had been able to walk a distance of fourteen miles.

The brain, as might be expected in this weather, reached us in a state not admitting minute examination; you see, however, a mass of black matter the size of a large walnut, in a kind of cyst at the base of the brain behind the orbit, pressing the left optic nerve and stretching the commissure. The carotid arteries are imbedded in its substance; the right is pervious, the left apparently obliterated at one point. The growth is partly of a grayish-brown colour, and partly black, and resembles the original disease in the eye. The soft parts remaining in the bottom of the orbit were sent with the brain; the remnant of the optic nerve formed a firm mass with dark streaks in its substance, about as large as a small horse-bean. The remaining portions of the other orbital nerves were healthy.

The thorax and abdomen were not examined.

The two cases of melanosis now detailed present to your view the most striking features of the disease, as it occurs in the eye; and afford the necessary data for determining on the proper course of treatment, more particularly in regard to the important question of operation. You see the malady developed in the interior of the globe, and destroying sight; making its way through the tunics so as to constitute an external tumour, appearing in a secondary form in various other organs, and thus terminating fatally. You see the eye removed, and the patient recovering from the operation; remaining well for a shorter or longer period and apparently cured, but sinking ultimately under the reappearance of the disease in its secondary form.

The primary seat of the affection is between the sclerotica and the retina, which suffer at first merely from the pressure of the morbid growth. Where the melanotic substance is deposited, the choroid cannot be traced; but it is seen, of natural appearance, lining the sclerotica in the part free from the disease.

Although no trace of melanotic degeneration had been observed in the retina, in either of these cases, the optic nerve was discoloured in the second; and the dark tumour within the cranium was probably connected with the continuation of the optic nerve. In a case, which I examined after death many years ago, where the contents of the orbit were converted into an uniform mass of sooty blackness, the same structure was continued through the foramen opticum, and connected with a large deposit of similar colour, at the basis of the brain. The preparation is in the Museum of the Royal College of Surgeons.

Mr. Lawrence in his clinical remarks, states the extirpation of the globe in fungus hæmatodes has been long abandoned in London, because the operation has been followed speedily and invariably by the return of disease: it is, at least, doubtful, whether there is a single well-established exception to this statement. The results of the operation have been more favourable in cases of melanosis; and it has been considered that, if the morbid growth has not made its way through the coats of the eye, the operation may be performed with the prospect of perfect success. The two cases now reported show that patients may survive the operation some months, or even some years. We learn, however, from the first case, that a long period must elapse before a patient can be pronounced completely cured, if we understand by cure security from the reappearance of melanosis in any of its forms. Here the eye was removed at an early period, under the most favourable circumstances; the patient continued well for more than three years, and then died from secondary manifestations of disease obviously dependent on the original affection.

Dr. Argyll Robertson, of Edinburgh, has published in the *Northern Journal of Medicine* (Nov., 1844) an interesting collection of cases, in which the eye was extirpated on account of various malignant affections. He has operated six times on account of melanosis; he states that five of the patients were cured, and that the result in one case was doubtful. After considering attentively the facts stated by Dr. R., and comparing them with the case of Elizabeth Rute, I doubt whether any one of his patients can be said to have been completely cured in the sense specified above; and I therefore conclude that in saying these persons were cured he merely means to imply that there was no return of disease in the orbit. In Case I. death took place two years after the operation from disease of the heart. Was it melanosis? Were any other organs diseased? Case II. remained well six months after the operation. Case III. died from melanosis affecting the hip and surrounding parts three years after the operation. Case IV. was well at the end of two years. Case V. died with symptoms of apoplexy ten months after the operation, having had fœtid discharge from the orbit for two months before death. It is most probable that melanotic disease had occurred within the cranium in this case. In Case VI. death occurred two years after the operation. The liver was enormously enlarged and of soft texture; there was no melanotic deposit in any part of the body.

Dr. Robertson gives an enumeration of twenty-three cases from other authorities stating that twenty were cured, while three terminated fatally from secondary melanotic formations. We cannot estimate such cases from a mere enumeration without particulars. Indeed, in order to elucidate the point now under considera tion, we require complete histories of the cases embracing a considerable period of time after the performance of the operations.

If it should be found, as I think it probable, that cases of melanosis affecting th eye, always terminate fatally, sooner or later, even although the organ should b removed at an early period, by secondary formations of the disease in other parts the malignant character of the disease will correspond to what occurs in the skin the only part besides the eye in which I have seen melanosis as a primary affec tion. In all the instances that I have known, of cutaneous melanosis removed b operation, death has ensued from subsequent affection of internal organs, gene rally with return of disease in the part.

Although the removal of the eye in melanosis cannot be undertaken with th promise of permanent success, it may be resorted to, should the patient wish i as a means of prolonging life. The benefit in this respect will be greater in pro portion as the operation is performed at an earliar period. Thus the patient i Case I. enjoyed perfect health for more than three years after the loss of the eye while Sarah Keeble (Case II.), in whom the disease had made its way throug the coats of the eye, survived only six months.

There may be some difficulty in recognizing the presence of the disease previously to the time at which it comes through the coats of the eye. I have not seen it in the first stage, in which there is total loss of vision with little if any change in the appearance of the eye. In Case I. sight was lost without pain or inflammation; while in Case II. there was considerable inflammation with swelling. The eye remains without further change for some months, when the increase of the morbid growth distends the globe, causing severe pain and redness, and pushes forwards the lens and iris. We find at this time the iris in contact with the cornea and motionless, but not otherwise changed; the pupil rather dilated; the lens opaque, and somewhat dingy. The sclerotica soon gives way at some point or points not far from its anterior margin. In one case there was a general bulging of the tumour below the margin of the cornea. This distended portion presented a dull discoloration from the dark colour of the melanotic deposit, and its surface was occupied by large straight vessels, apparently containing venous blood arranged as closely as possibly so as to cover the membrane completely. These appearances show clearly that there is an increase in the contents of the globe, and leave little doubt that the increase is a morbid growth, which must be referred either to fungus hæmatodes or melanosis. There may be effusion of fluid into the eyeball, causing staphyloma scleroticæ. The previous history of such a case will be different from that of the disease under consideration. The iris would probably be changed in colour, but not pushed against the cornea; the crystaline not opaque nor pressed forwards. In staphyloma scleroticæ from effusion of fluid the pupil is dilated to the utmost opposite to the swelling, and the iris may even disappear at that part. Should there be any doubt respecting the nature of the case, an exploratory puncture with a grooved needle should of course be resorted to before operation.

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55. *Cauterization of the Margin of the Cornea in Hemeralopia.*—M. Roussilhe, surgeon to the hospital of Castelnaudary, states that hemeralopia is very common in his neighbourhood. especially in persons affected with pellagra; and that for several years he has been in the habit of treating it by cauterization, with nitrate of silver around the margin of the cornea. This remedy has always effected a rapid cure.—*Revue Médicale*, Sept., 1845, from *Journ. de Méd. de. Bordeaux*, Sept., 1845.

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56. *On the Employment of Gum Arabic and of Iodine for the Removal of certain foreign bodies from the Eye.*—A German writer has recently proposed the use of a solution of gum arabic for the removal of foreign bodies, such as particles of dust, straw, &c., introduced between the eyelids and ball of the eye, when they are not impacted in the conjunctiva. In making this application the patient's head should be thrown back, so that the mucilage may be dropt between the lids or be introduced by the aid of a feather, care being taken not to touch the globe with the latter. This solution does not produce any disagreeable sensation: it instantaneously removes the pain and pressure by enveloping the foreign body, softening it, and sliding with it out of the eye. On the whole, the author affirms, that there is no means better or more sure.

Probably the white of egg, more easily procured than mucilage of gum, may afford analogous results.

We have little to say on the employment of this remedy. Most usually in the cases in which it is counseled, the tears alone suffice to remove the foreign body; but there is nothing to prevent its employment, as it is perfectly innocuous. It is not altogether thus with respect to *iodine*, employed by Dr. Reiniger against scales of iron imbedded in the cornea; and it is more simple and more sure to extract at the time the foreign body with the point of a bistoury or of a needle. We have not yet found any case rebellious to this slight operation; and to speak truth, it seems to us difficult to comprehend how an accustomed hand can fail to conquer all obstacles. However, many practitioners find a difficulty in the employment of sharp instruments with the eye, and the resource imagined by M. Reiniger may, therefore, be found very valuable. The following case will be read with interest:—

A cutler had received in the eye, while working, a particle of steel, which became deeply fixed in the thickness of the transparent cornea. It was vainly attempted to extract it by a forceps and needle, and the surgeon who had been first called in, was obliged to renounce the attempt. Eight days afterwards the eye was very red; the bit of steel was visible without the aid of a lens—it had preserved its brilliance. The patient complained of a sensation of itching and heat, and vision was no longer distinct.

It was at this time that M. Reiniger was consulted. This practitioner commenced by applying to the patient's eye a very powerful artificial magnet, but without obtaining any advantageous effect. He now saw no other resource than to employ some chemical method for dissolving the particle of steel, which had the dimensions of a needle's point. He could not venture to employ any dilute lotions of hydro-chloric acid, recommended for this purpose by MM. Krisner and Andrew, because the patient could not bear the application of mere cold water during entire hours to the open eye. He then resolved to prescribe the following collyrium:—R.—Iodinii, gr. 1; Iodid. Potass., gr. 10; Mell. Rosarum, ℥10½; M. et fiat solutio, S. A.

Upon the first application of this collyrium, the bit of steel became oxydized! and its lustre disappeared. Very soon the redness of the eye diminished, the heat and itching became alleviated; and by continuing the use of the collyrium, the particle of steel diminished to that degree that it was no longer capable of being distinguished without the aid of a lens. The patient finally recovered completely the visual faculty.

This process has for its object to transform the iron into a soluble iodide; and it appears to be much preferable not only to the employment of diluted hydrochloric acid, but also to acetic acid equally diluted as a collyrium, which was proposed some time ago.—*Journal de Chirurgie, par M. Malgaigne*, June, 1845.

57. *Ophthalmia occasioned by Larvæ under the Eyelids.* By Ormond B. of Nogaro.—On the 24th of June, 1844, I was consulted by a young countrywoman, regarding an acute inflammation of her right eye. It was very red, swollen, and tearful. The affection began on the 22d; and on the 23d she consulted a surgeon, by whom she was bled without benefit. A second bleeding being proposed, the patient refused to submit, and consulted me. Upon my asking her whether she could attribute her malady to the infliction of a blow, she stated that, at 9 A.M., on the 22d, when engaged in reaping rye, she felt a slight but distinct blow on the eye, immediately after which her sufferings commenced. Having separated the eyelids, I observed a whitish spot, which, having removed, I placed on my nail to exhibit to the patient. In doing so what was my astonishment to observe the foreign body in motion. It was a small worm. Recollecting that certain flies deposit their larvæ on different parts of animals, I thought that this little insect was not perhaps alone; having placed three drops of olive oil upon the globe of the eye, I was soon able to remove ten worms in succession.

These little animals moved with incredible alacrity. They were round, pretty long, and smaller than those deposited on meat by the large blue fly. Some, with a black spot on the head, seemed to move more vigorously than the rest.

About the end of the same month of the next year, a woman brought me her son, a boy between 10 and 11, complaining of an acute itching in one eye, which had continued since the previous evening. This itching had commenced immediately after a fly had come in contact with the part. I discovered small larvæ at the bottom of the superior eyelid, and removed six of them by the method adopted in the former case. I afterwards extracted two more, after which the eye got quite well.—*Monthly Journ. Med. Sci.*, March, 1846, from *Abeille Méd.*

58. *Chervil in Ophthalmia.*—Dr. Deval reports (*Annales d'Oculistique*) very favourably of the chervil (*anthriscus cerefolium*) in the treatment of ophthalmia. It is used as a poultice, or the eyes are washed with a saturated decoction of the plant. Dr. D. relates some cases of scrofulous ophthalmia with extreme photophobia promptly relieved by it.—*Journ. de Méd. et de Chirurg. Pratiques*, April, 1845.

59. *Hemeralopia.*—Mr. W. B. Page relates in the *Provincial Medical and Surgical Journal*, (April 8th, 1846,) two cases of hemeralopia occurring in boys, aged 14

and 15 years, piecers in a cotton factory. This occupation consisted in constantly watching an extended surface of white cotton threads passing before them, in order that they might join those which became broken in this part of the process of cotton spinning. They were both treated with blue pill, gr. v., night and morning, with carbonate of iron, ʒss, three times a-day. Amendment commenced as soon as the system became under the influence of the mercury, and both were cured.

60. *Extraction of a Musket-ball, which had been lodged in the Orbit for twenty-four years.* By J. Bresciani de Borsa.—Felice, an old soldier of one of Napoleon's armies, was, during an engagement, struck just above the left orbit by a musket-ball, but as a comrade fell dead at the same time at his side, he believed the ball had rebounded from the orbit and killed him. For more than twenty-four years after he was continually the subject of violent pains in the left eye and to attacks of cephalalgia—the eye itself projecting much from the orbit. The numerous surgeons under whose care he placed himself from time to time, believing his tale of the rebounding of the ball, afforded him little or no relief, and in 1837, he came to the hospital at Verona. The author, upon examining the case, came to the conclusion, that the projection of the eye could only be caused by the persistence of the foreign body in the orbit, for any exfoliation of bone which the blow might have caused would, in the course of so many years (the projection commencing soon after the accident), have been discharged or removed by absorption. A portion of bone was therefore at once removed from the orbit by the trephine. The track of the ball was found ossified, excepting at a small aperture, whence issued from time to time a little fluid. After the bone was removed, the ball was felt by means of a probe at the back of the orbit and removed by means of a forceps. The eye now retreated into the orbit, and after some weeks passed into a state of atrophy. The violent pains were quite relieved, and the patient died five years afterwards only, of pleuro-pneumonia. On examination, it was found that the cranial cavity had not been penetrated by the trephine, but opposite to where the bone had been removed was a deposit of osseous substance.—*Med. Chirurg. Rev.*, April, 1846, from *Saggi di Chirurgia Teorico-Pratica.*

MIDWIFERY.

61. *Placenta Prævia.*—Mr. Howell detailed to the Medical Society of London (Feb. 23, 1846,) a case of placenta prævia, in which there was considerable hemorrhage, slight pains only, and a tolerably rigid and slightly dilated os uteri, situated high up. The placenta was over the os uteri, and partly detached. Following the plan of Dr. Simpson, the placenta was removed entirely, and from that moment the loss of blood did not exceed two ounces. At the end of nine hours the head being still high up, and no labour-pains having come on, the perforator was employed, and delivery safely effected. The mother did well. During examination per vaginam, the blood flowed down the backs of the fingers, proving that the hemorrhage was from the detached portion of placenta and not from the uterus.

Dr. Waller also related four cases, which seemed somewhat in favour of the practice of Dr. Simpson. In the first case the placenta came away five hours before the child, (an arm presentation;) there was no hemorrhage. In the second case the placenta came away before the child; the mother in both these cases did well. In the third case he was called to a woman in whom the placenta was presenting; she had lost much blood, but was able to sit up in bed. The placenta was attached nearly over the entire os uteri, but not entirely, as the funis had descended into the vagina. The placenta was entirely detached by the hand, the hemorrhage ceased, the child was delivered, and, with its mother, did well. In the fourth case, he was called after hemorrhage had gone on for many days. There was still dangerous loss of blood. The os uteri was loose, but the cervix was so contracted that two fingers only could be introduced; with these he detached the placenta, but did not remove it. Hemorrhage ceased. The arm presented. There was no return of hemorrhage; and after waiting some hours, delivery was effected by version. The mother did well.—*Lancet*, March 14th, 1846.

62. *Intra-Uterine Perforation of Placenta.* By Thomas Taylor, Esq.—I was called yesterday morning, at four o'clock, to attend a young married woman in labour of her first child. The membranes had ruptured at four o'clock of the previous morning, but she suffered no pain until two hours before I saw her. On entering the room, I found her pains strong and effective; and on making an examination, I found a footling case with the breech in the pelvis. The pains becoming strong and expulsive, without a corresponding advance of the child, I brought down the presenting right foot, but was unable at that time to reach the other, the leg being in a position parallel with the body of the infant. The breech having been protruded, I again attempted to deliver the left leg, but on passing up my finger for that purpose, I found apparently a strong ligament, very tense, attached immediately below the knee, and which kept the limb in the position it was in, and incapable of being delivered; the arms, however, were easily brought down, and in a few minutes delivery took place, and with it the placenta: the child was still-born. On examination the placenta, which was lying on the chest of the infant, was discovered to be pierced by the right arm and left leg, the part round the leg being so firmly bound round it as to have destroyed the skin and cellular membrane by absorption; the calf of the leg was much swollen by the pressure during labour. There was no hemorrhage; on the contrary, the discharge was less than usual. The child was small, and about three weeks before its time. The mother is doing well.—*Prov. Med. and Surg. Journ.*, Jan. 7th, 1846.

63. *Retained Placenta.*—In a highly useful series of papers (published in the *Med. Times,*) upon the mechanism of uterine action, Dr. Clay, of Manchester, calls the attention of the reader to certain peculiarities in the manner in which the opposite portions of the uterus contract, in order to point out the best method of inducing expulsion of the placenta when that event does not readily take place. He shows that the two classes of uterine fibres, the longitudinal and the transverse, are essentially different in their action, and are excited by different causes, the longitudinal only being expulsive, the transverse having a dilating action. The exciting cause of the former class of muscular fibres he states to be irritation by pressure of the upper part of the vagina, and he therefore advises that, in retained placenta, the closed fist should be introduced, and pressure be made in imitation of that caused by the child's head. He gives an instance in which hour-glass contraction, a condition which is produced by inordinate action of the transverse fibres was thus overcome and the placenta liberated. The occasional retention of the placenta from its partial implantation in the Fallopian tube is commented upon by Dr. Payan.—*Ranking's Abstract.*

MISCELLANEOUS.

64. *The Plague and Quarantine Question.*—Some time since the French Academy of Medicine appointed a committee for the purpose of investigating the question of the plague, and the advantages of quarantine. M. Prus, in March last, made an interesting report on behalf of that committee, to the Academy. The following are the practical conclusions:—

The sanatary measures necessary to the security of France might be classed under five heads:—1. Indications of the countries from which the plague may be imported; 2. Precautions to be taken by ships leaving such countries; 3 Rules to be observed during their passage home; 4. Precautions to be taken on their arrival in French ports; 5. Measures to be adopted in case of the outbreak of the plague in France.

Sec. 1.—The countries from which the plague may be imported are Egypt Syria, and Turkey in Europe and in Asia. The regencies of Tripoli and Tunis and the empire of Morocco, must also be attentively watched. It is not necessary that the sanatary precautions should be equally rigorous at all times of the year

Thus the fear of importation of the plague from Egypt into France may be almost altogether abandoned from the 1st of July to the beginning of November, experience having proved that the Egyptian epidemics have always broken out between November and February, and have always been arrested before the end of the month of June.

Sec. 2.—It is evident that those lands from which danger may be apprehended should be submitted to constant medical observation. For that purpose French physicians shall be appointed to reside in the various countries in which their presence may be judged necessary. Their duty shall be to visit the ships in port, to return official information to government of the sanatary condition of the country, and to collect as many documents as possible relative to the plague. The above-named medical officers shall deliver a foul bill of health when a pestilential epidemic shall exist in their residence. For all other cases the certificate delivered to the captain shall be a clean bill of health. The physician shall not only mention in the bill the sanatary state of the port from which the ship sails, but he shall, moreover, go on board, examine the passengers and seamen, and the hygienic conditions of the vessel; all which operations shall take place on the day previous to, or the very day of weighing anchor. The permission hitherto granted to captains not to sail for six days after the delivery of the bill of health, renders that certificate perfectly nugatory. If it were true, as the researches of the commission appear to show, that the clothes and goods of pestilential subjects cannot communicate the disorder, it is evident that no peculiar measures need be adopted relative to them; but the commission is of opinion that in this matter it is best to act with due circumspection provisionally, and until further experiments have proved the innoxious nature of contaminated goods, they shall be ventilated during their passage home; or the trunks containing the clothes and linen of the passengers and crew shall be lead-lapped at the departure of the ship, and opened only in a French lazaretto.

Sect. 3.—All ships of the royal navy, and all the mail packets coming from the Levant, shall have a physician on board, whose duty it shall be to keep a correct and circumstantial account of the sanatary condition of all persons on board; a special instruction containing the signs of the plague, its treatment, the measures best calculated to prevent the formation of centres of infection, &c., shall be placed by government in the hands of the captains of the ships unprovided with a physician.

Sect. 4.—On arrival in a French port, the bill of health and the diary of the physician shall be sent on shore and carefully examined by the medical officer of the port, who shall go on board, examine the crew, the passengers, and the ship, and report on their condition. The duration of the quarantine shall then be fixed by the competent authorities, after the examination of the bill of health, the diary, and the report. When the bill of health shall be a *clean* bill, and when the plague shall not have broken out during the passage, the quarantine shall last ten days from the date of departure. If the bill of health be a *foul* bill, the quarantine shall last fifteen days. The above regulations are applicable to the ships provided with a physician; all other ships furnished with a clean bill, and not attacked with the plague during the passage, shall undergo a quarantine of ten days from the date of arrival. The quarantine shall last fifteen days for the same ships, free from disease during the journey, but possessing only a foul bill, and the goods shall besides be landed. Any ship, whatever may be the nature of the bill of health, attacked at sea with the plague, or having on board at the time of arrival a patient affected with a complaint of a suspicious nature, shall undergo a quarantine, the duration of which shall be regulated by the sanatary authorities of the port. The crew and passengers of such ship to be confined in the lazaretto, for a period not exceeding twenty days, but not less than fifteen. The goods shall be landed and ventilated, the ship shall be cleaned, and must remain empty for one month at least; it shall be expressly forbidden to sailors, guards, &c., to go on board.

Sect. 5.—The patients affected with the plague have been hitherto treated in the lazaretto in a most unscientific and barbarous manner. The physician is forbidden to approach nearer than within twelve metres of his patient—a prohibition which the committee hopes in future will be raised. Other regulations, more in harmony with the rights of the patients and the feelings and habits of the physicians, must take the place of those rules hitherto in vigour, and which can no longer be permitted to exist. The commission proposes that all persons affected with plague, and received in a French lazaretto, shall be attended with the same care as the patients of our best hospitals. In case of death the bodies shall be dissected, and the minutes of the autopsy shall be signed by all present.

Sect. 6.—Should the plague accidentally break out in a French city, the patient shall be removed from the house of infection to a distant and well-ventilated place, where he shall receive the care he requires. The other inhabitants of the same house shall also be sent to another residence, where they shall be kept under the observation of a physician. The evacuated house shall be cleaned, and remain empty for the space of one month at least. Should several dwelling-houses be attacked, they shall be all treated in the same manner. The principle would remain the same if entire cities were attacked, and the measures above mentioned should be carried out with the utmost degree of severity.

65. *Removal of Carbonic Acid from Wells and Cellars.*—The plan for removing carbonic acid where it is collected in such quantity as to endanger life, has hitherto consisted either in placing in the locality, vessels containing a quantity of slacked lime, mixed with water, or in causing a current of air to traverse the place where the gas is collected. The first process is slow, and the second not always practicable. M. Faucille has lately suggested an ingenious plan for entirely getting rid of this noxious gas. In sinking a well at Vichy, he found that the carbonic acid was evolved in such quantity that the works could with difficulty be carried on. All the usual means for expelling the gas were employed, including free ventilation, and the use of copious shower-baths, without success. M. Faucille then fixed upon the edge of the well a small boiler, of the form of the ancient Eoliplie, the tube from which was made sufficiently long to reach to the bottom of the excavation. This apparatus, it is well known, acts simply by producing a powerful steam blast. At first the vapour which issued was opaque, but it soon became transparent, and in about thirty minutes the well was so completely cleared of carbonic acid that the works could be resumed. The apparatus was employed until the well was completed. M. Faucille has also used this machine for removing the vapours of sulphuretted hydrogen gas; and it is obvious that it may be easily and safely employed for expeditiously removing noxious gases from drains, sewers, shafts of mines, and other excavations.

If a steam engine were at hand a blast of steam carried from this into the vitiated atmosphere would equally answer the purpose. The Eolipile is nothing more than a portable steam boiler.—*Lond. Med. Gaz.*, May, 1846.

66. *New Sign of Death.*—M. Ripault has lately directed the attention of the Academy of Sciences to a new sign of death. This is, *perfect flaccidity of the iris* when the globe of the eye is compressed in two opposite directions. If the individual be living, the pupil retains its circular form, notwithstanding the compression. If dead, the aperture becomes irregular, and the circular form is lost.—*Ibid.*

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of Lithotrity, performed by Dr. J. Randolph. Reported by A. E. Stocker, M. D., Physician to the Pennsylvania Institution for the Instruction of the Blind, and to the Philadelphia Dispensary, &c.

Having recently enjoyed an opportunity of witnessing the operation of lithotrity, performed by Dr. Randolph, of this city, and being thoroughly convinced of the great advantages possessed by this operation over the several methods of cutting usually resorted to for the relief of patients afflicted with calculus, I am induced to send you the following notes for publication, hoping that they may prove useful and interesting to the readers of your valuable journal.

Mr. A. H. B.........., æt. 30, clerk in a forwarding house in this city, of good constitution and temperate habits, had been afflicted with stone in his bladder for nearly two years. His sufferings of late have greatly increased: he had an attack of swelled testicle about five months ago, a stricture also, and an ulcer just within the meatus urinarius, which gave rise to a considerable discharge of purulent matter. Dr. Randolph having previously fully dilated the stricture, on the 12th day of March, 1846, at 11 A. M., in presence of Dr. Goddard and myself, proceeded to operate. The patient being properly arranged on the side of the bed, his bladder was first emptied by drawing off the urine by the catheter; next, tepid water was injected into it, in as large quantity as it would conveniently bear. The sound being now introduced, Dr. R. detected the stone on the left side of the bladder. Withdrawing the sound, Dr. R. then introduced Heurteloup's instrument, and succeeded in catching the calculus almost immediately; its diameter measured about one and three-quarter inches, and was crushed by a few turns of the screw. A large fragment was again seized and crushed in like manner. The operation lasted but two or three minutes, and was free from pain! The patient rose up immediately after it and dressed himself. Upon sitting in an easy rocking-chair, he observed to us the difference between his present and former sensations upon rocking to and fro, hitherto having always been able to feel the calculus moving backwards and forwards, but now was entirely free from that sensation. In about ten minutes after the operation, he passed a considerable quantity of water, a great deal of sand and large fragments of stone. So soft was the stone in this case, we were entirely satisfied that, had lithotomy been resorted to, the most gentle use of the forceps for its extraction would have crushed it at once, and have obliged a resort to the scoop, and injections to wash out the sand and fragments, and even then without any certainty of the bladder being entirely freed from all fragments of stone. The patient continued to pass considerable quantities of calculous matter, many pieces being of large size, and on Wednesday the 18th, Dr. Randolph operated as before, seizing and crushing the stone three times; during the day, the patient passed numerous pieces of calculi, many of which were of large size. By noon of the following day, the patient had discharged per urethram a large tablespoonful of calculous matter.

On the following Tuesday, March 24th, at 11 A. M., the operation was repeated. Dr. R. decided in the present instance not to inject fluid into the bladder, as the patient could now retain his urine for several hours. The sound being introduced, and having detected the location of the calculus, a different instrument, (being a modification of Heurteloup's,) and better calculated to seize and crush fragments of stone, was introduced; the stone was seized and crushed several times, and the instrument withdrawn filled with calculous matter; soon afterwards, the patient voided large quantities of stone.

Saturday, March 28th, at 11 A. M., the operation was for a third time repeated; the bladder was not injected; the stone was immediately caught and crushed five times in succession. On the following day the patient expressed himself almost well, and desirous of returning to his accustomed vocation.

On Wednesday, April 1st, the operation was repeated. As before, the bladder was not injected; fragments of stone were caught and crushed six times; the same instrument was used upon this occasion as upon the last, and was withdrawn full of calculous matter. The patient continued for several days to pass portions of stone and sand, upon every occasion expressing more relief and benefit from the operation. At the end of the following week, he asked permission to resume his duties in the counting-room, which was readily acceded to, as there seemed no longer to be any contraindication.

Tuesday, April 28th. The bladder was carefully sounded by Dr. Randolph, Dr. Goddard, and myself, and was found entirely free from all calculous matter. The patient also expressed his full conviction that he was completely cured: he is now enabled to retain his water as well as he ever could.

The amount of stone voided fills a box two and a half inches in diameter, and a half inch deep, although many of the smaller fragments and sand have inevitably been lost, in emptying from one vessel to another.

The facts of the above case suggest many considerations:

1st. As to the operation: its entire freedom from pain under favourable circumstances, especially if compared with that of lithotomy.

2d. The length of time necessary to a cure. In the present case, the patient was not confined to his bed for a single hour, nor had more than four weeks elapsed from the commencement of the treatment until the patient returned to the duties of his situation; while, under the most favourable circumstances, if lithotomy had been resorted to, four, six, or eight weeks would have been a moderate term for confinement to a bed, rendered doubly irksome by the unpleasant discharges which even the most exemplary cleanliness cannot prevent from adding in a greater or less degree to the discomfort of the patient.

3d. The freedom from danger. When carefully and skillfully performed there is in this operation but little danger, while the utmost skill and tact of the surgeon are of no avail in many cases to arrest the hemorrhage and other fearful consequences so frequently attendant upon the operation of lithotomy.

Another and by no means a trifling advantage of the operation of lithotrity over lithotomy, is the fact of no paralysis of the bladder and incontinence of urine resulting from the former of the two operations; a sequel to the latter, however, most bitterly and unavailingly deplored by the unhappy sufferers.

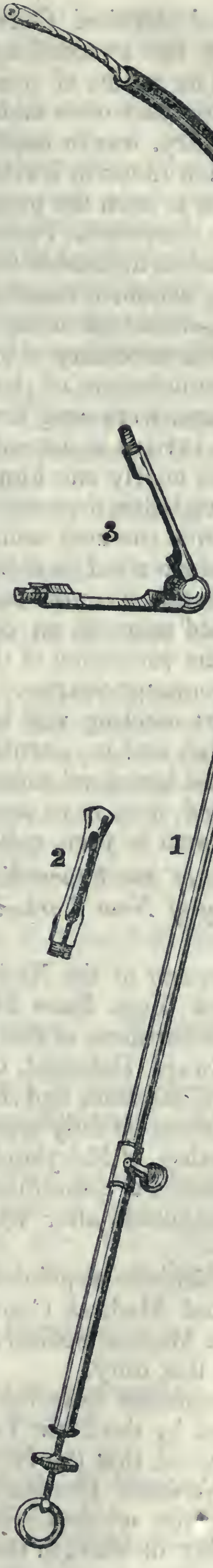
In conclusion, I would remark, it is a source of deep regret that circumstances have prevented the publication of many other cases of lithotrity most successfully performed by the same skilful and distinguished surgeon; a knowledge of which would prove to the most prejudiced observer, the immense importance to be attached to this operation, and its great advantages over the operation of lithotomy.

Philadelphia, May, 1846.

Description of a new Instrument for cauterizing the Urethra in cases of Spermatorrhœa. By. F. Campbell Stewart, M. D.

Having frequently experienced great inconvenience in the use of Lallemand's instrument for cauterizing the urethra, from being obliged to go through the tedious process of pulverizing, melting, and scraping the caustic—a process attended with considerable trouble where the instrument has to be frequently used—before it could be properly prepared, it occurred to me that these difficulties might be obviated by having the instrument so constructed as to permit the use of cylinders of the caustic which could be at all times kept prepared and ready to arm the instrument at a moment's notice. I accordingly requested our ingenious instrument-maker, Mr. George Tiemann, to fabricate for me such a *porte caustique* as is represented by the accompanying wood-cut. Small cylinders of nitrate of silver were cast for me by my apothecary, Mr. Frey, to fit the canula into which they were intended to be introduced, and I have continued to use the instrument altogether for the last two years as a substitute for, and, as I think, an improvement on that of Dr. Lallemand.

The instrument is made in all respects similar to that of Lallemand, except at its extremity, where a small hollow canula, made of platina, and presenting two fenestral or small longitudinal openings, is contrived to screw on the chain stylet passing through the long canula or catheter, Fig. 1. This is the portion intended to hold the caustic cylinder, and is arranged so as to open by its own elasticity, as in Fig. 2, or by a small hinge as in Fig. 3. In all other respects it is similar to, and should be used as the foreign instrument.



National Medical Convention.—We invite especial attention to the minutes of the Proceedings of the National Medical Convention inserted below. The results of this meeting are altogether gratifying. The mere bringing together of so many members of the profession from different parts of our country, was in itself a great achievement, when the sacrifices which medical men incur in leaving their business is considered, and in the present case it is even the greater from the unpropitious auspices under which they were convened. Various previous attempts of a similar kind having signally failed, distrust of the success of the present one naturally prevailed, paralyzing action, or causing postponement in the appointment of delegates, —many associations waiting for the action of others, whose concurrence was deemed necessary to success; and finally, to complete the discouragement, denunciations of the objects of the convention and vituperations of its originator, were sent forth from the very hall in which the convention had been invited to assemble. Nevertheless, sixteen States were represented, and nearly one hundred delegates assembled. Indeed, in numbers and respectability, the convention exceeded the anticipations of the most sanguine; while the zeal and spirit displayed, and the courtesy and dignity which characterized its deliberations, were in the highest degree honourable.

A foundation has now been laid, and if a suitable superstructure be hereafter erected upon it, an enduring citadel will be constructed, which will serve for the protection of the honour and interests of the profession against assaults from any quarter.

The next meeting will be held in Philadelphia, on the first Wednesday in May next, and we earnestly urge the *early appointment* of delegates not only for the beneficial influence of example, but also that those who may be appointed, may have ample time to ponder well upon the important questions they will be then called upon to decide.

Minutes of the Proceedings of the National Medical Convention, held in the City of New York, in the month of May, 1846.

Tuesday, May 5*th*, 1846.

At a meeting of the National Medical Convention, pursuant to the call of the New York State Medical Society, convened in the building of the Medical Department of the University of the city of New York, on motion of Dr. Edward Delafield, of New York, Dr. Bell, of Philadelphia, was appointed Chairman, and Dr. Buel, of New York, Secretary, to act until the Convention be duly organized.

Drs. Baxley, of Maryland, Davis, of New York, and Arnold, of Georgia, were appointed a committee to receive the credentials of Delegates.

The Committee, after having performed that duty, made the following report:—

The Committee appointed to examine the credentials of the Delegates to the National Medical Convention, recommended to be held by the New York State Medical Society, in the city of New York, report, that they have performed that duty.

The Committee have felt themselves embarrassed by conflicting resolutions passed by the New York Society in 1845 and 1846, viz.: in 1845, it was "*Resolved*, that the New York State Medical Society earnestly recommend a *National Convention of Delegates* from Medical Societies and Colleges in the whole *Union*, to convene in the city of New York, on the first Tuesday in May, in the year 1846, for the purpose of adopting some *concerted action* on the subject set forth in the foregoing preamble."

In February, 1846, it was "*Resolved*, That the preamble and resolutions passed by this Society at its annual session, Feb. 6, 1845, did not contemplate the appointment of Delegates to the National Convention, by County or merely local Societies in those States where Delegates *are* appointed by a regularly organized *State* Society."

They have therefore thought proper to report the names of all gentlemen from Medical Societies, Colleges, and Institutions, of all the States who come properly accredited, in accordance with the original resolution, and leave it to the Convention to determine whether such shall constitute the National Medical Convention; or whether the interpretation of the resolution of 1845, adopted by the N. Y. Society in 1846, which excludes delegates from local or voluntary societies from States sending delegates from regularly organized State Societies shall be strictly adhered to.

Respectfully submitted, H. W. BAXLEY, N. S. DAVIS, RICHARD D. ARNOLD.

The following list of Delegates was then handed in:—

From VERMONT.—*Society of the Alumni of Castleton Medical College.*—Drs. Simeon A. Cook, Joseph Perkins, Egbert Jamieson, Horace Green.

Vermont Medical College.—Dr. Alonzo Clark.

From NEW HAMPSHIRE.—*Centre District N. H. Medical Society.*—Drs. Charles P. Gage, Richard P. J. Tenney.

From MASSACHUSETTS.—*Berkshire Med. Institute.*—Dr. Alonzo Clark.

From CONNECTICUT.—*State Medical Society.*—Drs. V. M. Dow, Rufus Blakeman, William H. Cogswell, J. G. Beckwith, Eleazar Hunt, D. T. Brainard, Richard Warner.

Medical Institute of Yale College.—Drs. J. Ives, J. Knight.

From NEW YORK.—*Medical Society of City and County of New York.*—Drs. James R. Manley, Isaac Wood, John W. Francis, Benjamin Drake, Gilbert Smith, W. W. Minor, F. U. Johnston, James Stewart, Thomas Chalmers, H. D. Bulkley, W. P. Buel, J. R. Wood, John S. Heard, A. N. Gunn, B. R. Robson, John Watson, J. S. Ferguson, R. L. Morris, R. T. Underhill, S. P. White, J. R. Van Kleek, J. C. Cheeseman, A. C. Post, G. Buck, O. S. Bartles.

N. Y. Medical and Surgical Society.—Drs. F. Campbell Stewart, J. A. Swett, Edward L. Beadle.

Bloomingdale Asylum.—Dr. Pliny Earle.

Kings Co. Medical Society.—Drs. Chauncey L. Mitchell, Bradley Parker, J. Sullivan Thorne, T. L. Mason.

Alumni Geneva Medical College.—Drs. Peter Wilson, H. M. Gray.

Medical Faculty of College of Physicians and Surgeons.—Drs. John B. Beck, Willard Parker.

Medical Society of State of New York.—Drs. John Stearns, Stephen Hasbrouck, Merrit H. Cash, S. M. Crawford, Joel A. Wing, Daniel Ayres, Darius Clark, Thos. W. Blatchford, Sumner Ely, John McCall, N. S. Davis, Augustus Willard, L. G. Tefft, Alexander McIntyre, Maltby Strong, Charles Winnie.

Madison Co. Medical Society.—Dr. D. E. Hurd.

New York Hospital.—Dr. J. H. Griscom.

University of the City of N. York.—Drs. G. S. Pattison, G. S. Bedford.

Buffalo Medical Association.—Dr. Bryant Burwell.

Erie Co. Medical Society.—Dr. Austin Flint.

Albany Medical College.—Drs. J. McNaughton, A. March.

Genesee Medical Society.—Dr. John Coates.

Trustees of the College of Physicians and Surgeons.—Drs. A. H. Stevens, Thomas Cock, Edward Delafield.

Geneva Medical College.—D. Charles A. Lee.

From PENNSYLVANIA.—*Philadelphia Medical Society.*—Drs. John Bell, Henry Bond, Geo. W. Norris, Isaac Hays, Isaac Parrish, Joseph Warrington, Alfred Stillé, J. Rodman Paul, Francis West, Gouverneur Emerson, Caspar Morris, Meredith Clymer.

Medical Department of Pennsylvania College.—Drs. H. S. Patterson, W. A. Atlee.

From DELAWARE.—*Medical Association of Wilmington.*—Dr. Lewis P. Bush.

Medical Society of Delaware.—Drs. James W. Thompson, E. S. Rickards, William W. Stuart, William Cummins, Gove Saulsbury, James Couper, ——— Morris.

From MARYLAND.—*Washington Medical College.*—Drs. H. W. Baxley, Charles Bell Gibson.

From VIRGINIA.—*Medical Society of Virginia.*—Drs. Robert W. Haxall, Samuel A. Patteson, Charles Mills, Frederick Marx, James Conway, J. Cullen.

From GEORGIA.—*Georgia Medical Society.*—Dr. Richard D. Arnold.

From MISSISSIPPI.—*Mississippi State Medical Society.*—Drs. E. D. Fenner, of New Orleans, C. S. Magoun.

From INDIANA.—*La Porte University.*—Dr. Azariah B. Shipman.

From ILLINOIS.—*Medical Department of Illinois College.*—Dr. Edward Mead.

From TENNESSEE.—*Medical Society of Tennessee.*—Dr. Wm. A. Cheatham.

It was on motion *Resolved,* that the Committee be continued to receive the credentials of such Delegates as may hereafter arrive.

On motion of Dr. Arnold, it was *Resolved,* that all gentlemen who have presented credentials from any regularly organized Medical Society in this Union, be considered members of this Convention.

It was moved by Dr. Davis, and carried, that Dr. Theophilus C. Dunn, President of the Rhode Island State Medical Society, be invited to take a seat as a member of this Convention.

It was moved by Dr. Underhill, and duly seconded, that all medical gentlemen in good standing, who may be present from States not otherwise represented, be admitted as delegates, which motion was carried.

Drs. E. C. Marsh, and Lyndon A. Smith, of New Jersey, were invited to take seats under the above resolution.

On motion, a Committee of one from each State represented in the Convention, was appointed to nominate officers for the Convention.

The following gentlemen were appointed:

From New Hampshire, Dr. Gage; Vermont, Cook; Massachusetts, Clark; Rhode Island, Dunn; Connecticut, Knight; New York, Stearns; New Jersey, Marsh; Pennsylvania, Bond; Delaware, Bush; Maryland, Baxley; Virginia, Haxall; Georgia, Arnold; Mississippi, Fenner; Indiana, Shipman; Illinois, Mead; Tennessee, Cheatham.

The Committee, after having retired, returned and made the following report:

The Committee appointed to nominate suitable officers to preside over the Convention, report that they have unanimously agreed to propose the names of the following gentlemen:—

For President.—Dr. J. Knight, of New Haven.

For Vice Presidents.—Dr. John Bell, of Philadelphia; Dr. Edward Delafield, of New York City.

For Secretaries.—Dr. Richard D. Arnold, of Savannah; Dr. Alfred Stillé, of Philadelphia.

The Report was adopted:—*Committee discharged.*

The officers, with the exception of Dr. Delafield, took their seats.

Dr. Bedford, of the University of the city of New York, moved the following preamble and resolution, seconded by Dr. Pattison, also of the University of the city of New York:—

Whereas, the call of the State Medical Society of New York, for a National Medical Convention to be held in the city of New York, on the first Tuesday in May, has failed in a representation from one-half the United States, and from a majority of the Medical Colleges; and whereas the State Medical Society has emphatically stated that there is no mode of accomplishing the object of the Convention, without concert of action on the part of the Medical Societies, Colleges and Institutions of *all* the States, therefore, Resolved, that this Convention adjourn *sine die.*

The Yeas and Nays were called on this, and were as follows:—

Yeas—Drs. Bedford and Pattison—2.

Nays—Drs. S. A. Cook, H. Green, C. P. Gage, R. P. J. Tenney, A. Clark, W. H. Cogswell, J. G. Beckwith, R. Warner, D. T. Brainard, B. Burwell, A. Flint, J. McNaughton, A. March, J. Coates, F. C. Stewart, J. A. Swett, E. L. Beadle, C. A. Lee, J. Bell, H. Bond, G. W. Norris, I. Hays, I. Parrish, J. L. Warrington, A. Stillé, J. R. Paul, F. West, G. Emerson, M. Clymer, W. A. Atlee, L. P. Bush, E. S. Rickards, G. Saulsbury, J. Couper, H. W. Baxley, R. W. Haxall, S. A. Patteson. J. Cullen, R. D. Arnold, E. D. Fenner, A. B. Shipman, E. Mead, W. A. Cheatham, P. Wilson, D. E. Hurd, I. Wood, G. Smith, H. D. Bulkley, W. P. Buel, J. R. Wood, J. S. Heard, A. N. Gunn, J. Watson, R. L. Morris, R. T. Underhill, S. P. White, J. C. Cheeseman, A. C. Post, G. Buck, O. S. Bartles, S. Hasbrouck, J. A. Wing, D. Ayres, N. S. Davis, A. Willard, P. Earle, T. Cock, C. L. Mitchell, J. S. Thorne, T. S. Dunn, E. J. Marsh, L. A. Smith, W. W. Stuart, and J. Knight—74.

Dr. Clymer then offered the following resolution:—

Resolved, That a Committee be appointed to provide other accommodations for the sittings of this Convention, than in the University of New York.

Several amendments were offered to this resolution, but while they were pending, Dr. Haxall moved to lay the whole upon the table, which was carried—Yeas 34, Nays 31.

Dr. N. S. Davis moved the following, which was adopted:—

Resolved, That a Committee of nine be appointed to bring the subject of Medical Education before the Convention in the form of distinct propositions, suitable for discussion and action, and that it report at the next meeting.

The following gentlemen were appointed:

Drs. N. S. Davis, March, Hays, Watson, Brainard, Stearns, Bush, Haxall, Bell.

On motion of Dr. J. R. Wood, of New York, the President was added to the Committee.

Dr. Buel offered the following, which was adopted:

Resolved, That the Committee be instructed to receive and submit propositions on all subjects proper to be brought before this Convention.

On motion the Convention adjourned until 10 o'clock next morning.

Wednesday, May 6th.

The Convention met pursuant to adjournment. The roll was called, and 63 delegates answered to their names. The minutes of the last meeting were then read and confirmed. The Chairman of the Committee on Credentials announced the presence of Dr. C. A. Pope, delegate from the Medical Society of the State of Missouri, and of Drs. Anderson, G. Dana, J. Spaulding, and J. A. Allen, delegates from the Vermont Medical Society.

Dr. N. S. Davis, Chairman of the Committee, appointed at the last meeting to present the subject of Medical Education to the Convention in a form proper for discussion, and, generally, to prepare business for its action, reported that, owing to the short time allowed them, the Committee had not been able to agree in regard to the subject especially entrusted to them, but that they had unanimously determined to lay before the Convention certain resolutions which they believe adapted to fulfil the immediate objects contemplated by the Convention.

Whereupon Dr. Hays, from the same Committee, submitted the following preamble and resolutions:

Whereas, it has been shown by experience, that the Association of persons engaged in the same pursuit, facilitates the attainment of their common objects, therefore—

1st. *Resolved*, that it is expedient for the medical profession of the United States, to institute a *National Medical Association*, for the protection of their interests, for the maintenance of their honour and respectability, for the advancement of their knowledge, and for the extension of their usefulness.

2d. *Resolved*, that a Committee of seven be appointed to report a plan of organization for such an Association, at the meeting to be held in Philadelphia, on the first Wednesday in May, 1847.

3d. *Resolved*, that a Committee of seven be appointed to prepare and issue an address to the different regularly organized Medical Societies and chartered Medical Schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to a Convention, to be held in Philadelphia, on the first Wednesday in May 1847.

4th. *Resolved*, that it is desirable that a uniform and elevated standard of requirements for the degree of M. D., should be adopted by all the medical schools in the United States, and that a Committee of seven be appointed to report on this subject at the meeting to be held in Philadelphia, on the first Wednesday in May, 1847.

5th. *Resolved*, that it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education, and that a Committee of seven be appointed to report on the standard of acquirements which should be exacted of such young men, and to report at the meeting to be held on the first Wednesday in May, 1847.

6th. *Resolved*, that it is expedient that the medical profession of the United States should be governed by the same code of Medical Ethics, and that a Committee of seven be appointed to report a code for that purpose, at the meeting to be held at Philadelphia, on the first Wednesday in May, 1847.

Dr. J. S. Copes was announced to be a duly authorized delegate from the Medical Society of Mississippi; and Dr. G. H. White, of the Hudson Lunatic Asylum, was admitted to a seat in the Convention.

Dr. G. S. Pattison moved that the Report of the Committee on Business be adopted. Carried, *nem. diss.*

Dr. Stearns moved that the resolutions be considered *seriatim*. Carried.

The preamble and 1st resolution were then adopted *nem. diss.*

The 2d resolution being under discussion, Dr. S. Hasbrouck moved that the committee to be appointed under that resolution, report on to-morrow morning. After some remarks by Drs. Haxall, Thompson, and Davis, the motion was withdrawn.

Dr. Griscom moved that the next Convention be held in September, 1847. After some remarks by delegates from the South, declaring that physicians of that region could not possibly be spared from their duties in the autumn, the motion was rejected.

The 2d resolution and then the 3d, were adopted without further discussion, *nem. diss.*

Dr. F. Hasbrouck, as Superintendent of the N. Y. City Lunatic Asylum, was here admitted to a seat in the Convention.

The 4th resolution was then adopted, *nem. diss.*

The 5th resolution, after some observations from Drs. Manley and H. S. Patterson, and the loss of an amendment proposed by the latter gentleman, was adopted, *nem. diss.*

The 6th resolution was in like manner adopted, without debate; after which, on motion of Dr. Bush, the preamble and resolutions collectively were unanimously adopted.

The Convention then took a recess for half an hour, after empowering the President to fill the Committees called for by the resolutions just passed.

On re-assembling, the Convention received Dr. G. Sumner, a delegate from the Medical Society of Connecticut.

Dr. Clymer asked and received permission to correct an error personal to himself in a report of a morning newspaper (the N. Y. Herald,) concerning the vote on Dr. Haxall's motion to lay on the table the resolution offered by Dr. Clymer for adjourning forthwith from the rooms of the Faculty of the University of New York city. The newspaper in question had stated that the only serious opposition to laying this resolution on the table proceeded from the delegates of the College of Physicians and Surgeons, whereas the vote had really stood 34 in favour, and 31 against disposing of the resolution in this manner.

Dr. J. B. Beck, of the Faculty of the College of Physicians and Surgeons, stated that so far from any opposition to laying the resolution on the table having proceeded from the body which he represented, neither he nor his colleague, Dr. Parker, the only delegates from that body, were even so much as present during the discussion, or at the vote, on the resolution.

The Secretary asked permission to insert the correction in the minutes of the last meeting as confirmed; stating that the vote was upon the original record of the proceedings, but had been omitted in transcription. Leave was granted.

Dr. Sumner moved to reconsider the 2d resolution; the motion, after remarks by Drs. Baxley, Haxall, and Davis, was laid on the table.

Dr. Bartles introduced the following resolution:

Resolved, That the union of the business of *Teaching* and *Licensing* in the same hands is wrong in principle, and liable to great abuse in practice. Instead of conferring the right to license on Medical Colleges, and State and County Medical Societies, it should be restricted to one Board in each State, composed in fair proportion of representatives from its Medical Colleges and the profession at large, and the pay for whose services as Examiners should in no degree depend on the number licensed by them.

Dr. Sumner moved to lay the resolution on the table. After remarks by Drs. F. C. Stewart and Clymer, the motion was withdrawn.

Dr. Parrish moved that the resolution be referred to the Committee under the 4th resolution reported by the Committee on Business.

Dr. Baxley moved an amendment, which was accepted by Dr. Parrish, providing that all communication upon the subject of medical degrees be referred to the same Committee.

Dr. Manley remarked at length upon the subject of Medical Education. Dr. Baxley replied. Dr. Manley rejoined; and then moved to refer the resolution introduced by Dr. Bartles to a special Committee.

On motion, the subject was temporarily laid upon the table in order that the President might announce the Committees he had appointed.

They were as follows:

Under the 2d Resolution.—Drs. J. Watson, J. Stearns, F. C. Stewart, N. Y.; A. Stillé, Philadelphia; N. S. Davis, Binghampton, N. Y.; Cogswell, N. Haven, Conn.; Fenner, New Orleans.

Under the 3d Resolution.—Drs. E. Ives, Dow, and Sumner, of N. Haven, Conn.; J. McNaughton, Albany, N. Y.; Blatchford, Troy, N. Y.; Burwell, Buffalo, N. Y.; and Baxley, Baltimore, Md.

Under the 4th Resolution.—Drs. Haxall and Cullen, Richmond, Va.; S. A. Patteson, Manchester, Va.; G. W. Norris, Philadelphia; A. Flint, Buffalo, N. Y.; J. Perkins, Castleton, Vt.; and J. A. Wing, Albany, N. Y.

Under the 5th Resolution.—Drs. J. Couper, Newcastle, Del.; L. P. Bush, and J. W. Thompson, Wilmington, Del.; E. Mead, Jacksonville, Ill.; A. March, Albany, N. Y.; J. Atlee, Philadelphia; and D. T. Brainard, New London, Conn.

Under the 6th Resolution.—Drs. Bell, Hays, and Emerson, Philadelphia; Morris, Dover, Del.; T. C. Dunn, Newport, R. I.; Alonzo Clark, N. Y.; and R. D. Arnold, Savannah, Ga.

Dr. Haxall moved that the President be added, as Chairman to the Committee under the 3d resolution. Carried unanimously.

The consideration of Dr. Bartles' resolution, as amended by Dr. Manley, was then resumed, and it was ordered that when the vote upon it is taken, it be taken by yeas and nays.

Drs. S. Hasbrouck and Davis remarked at length upon the subject of the resolution. Observations were also made by Drs. Baxley, and Underhill.

Dr. Sumner moved to lay the Resolution on the table. Lost by a vote of 34 to 40.

Dr. Parrish having withdrawn his amendment, the yeas and nays on Dr. Bartles' resolution, as amended by Dr. Manley, were called, when it was adopted by the following vote:

Yeas.—Drs. Arnold, Ayres, Bartles, Beadle, Beck, Bell, Bulkley, Burwell, Bond, Buck, Buel, Cheeseman, Cock, Coates, Copes, Cummins, Cook, Davis, Delafield, Drake, Fenner, Ferguson, Gage, Gray, Griscom, Gunn, F. Hasbrouck, S. Hasbrouck, Heard, Magoun, McNaughton, Mitchell, R. L. Morris, B. Parker, W. Parker, Paul, Parrish, Pope, Rickards, Saulsbury, F. C. Stewart, W. W. Stuart, L. A. Smith, Stillé, Stearns, Swett, Thorne, Underhill, Van Kleek, Warner, Watson, Warrington, West, Willard, S. P. White, G. H. White, Wing, J. Wood, J. R. Wood.—59.

Nays.—Drs. Baxley, Beckwith, Bedford, Blakeman, Brainard, Bush, Cheatham, A. Clark, Clymer, Couper, Cullen, Emerson, Flint, Gibson, Hays, Haxall, Lee, March, H. S. Patterson, G. S. Pattison, S. A; Patteson, Shipman, Sumner, Thompson.—24.

Dr. Griscom moved that a Committee of *five* be appointed to consider the *expediency*, and if expedient, the *mode*, of recommending and urging upon the several State governments the adoption of measures for a registration of the births, marriages, and deaths, of their several populations. Carried, *nem. diss.*

Dr. Magoun moved that the thanks of the Convention be presented to the officers of this Convention, for the prompt and efficient discharge of their duties. Carried, *nem. diss.*

Dr. Griscom introduced the following resolution:

Resolved, That Mr. Lemuel Shattuck, of Boston; Drs. Jarvis, of Dorchester, Mass.; Emerson, of Philadelphia; T. R. Beck, of Albany; and C. A. Lee, of N. Y.; be a Committee to prepare a nomenclature of diseases, adapted to the United States, having reference to a general registration of deaths; to report to a future Convention, which was adopted; and on motion, Dr. Griscom was added to the Committee as Chairman.

Dr. Swett, of N. Y., offered the following, which, after receiving the approbation of the delegates from New York, was adopted:

Resolved, That a publication of the proceedings of this Convention be made in pamphlet form; that ten thousand copies be printed; that the New York City delegation assume the expense; and that it be referred to the first Standing Committee.

The President then announced the Committees appointed by him, under the resolutions of Dr. Bartles, and of Dr. Griscom, as follows:—

Under Dr. Bartles, in reference to the separation of teaching and licensing: Drs. McNaughton, Albany, N. Y.; J. R. Manley, N. Y.; J. W. Francis, N. Y.; Isaac Parrish, Philada.; R. Blakeman, Fairfield, Conn.; J. Cullen, Richmond, Va.; and Thomas Cock, N. Y.

Under that of Dr. Griscom, in reference to the subject of registration: Drs. J. H. Griscom, N. Y.; G. Emerson, Philada.; A. Clark, N. Y.; C. A. Lee, Geneva, N. Y.; and James Stewart, N. Y.

The following resolution, offered by D. Thomson, of Delaware, and seconded by Dr. Clymer, of Philadelphia, was unanimously adopted:

Resolved, That this Convention hereby tender to the Medical Faculty of the City of New York, and to the Trustees of the College of Physicians and Surgeons of the State of New York, its unanimous thanks for the courteous offer of their respective buildings for the sitting of this Convention.

Dr. Bell introduced the following resolution, which was adopted, *nem. diss.*

Resolved, That the Convention give its approval to the objects and labours of the Sydenham Society.

Dr. Cogswell offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of this Convention be presented to the President, for the able, gentlemanly, and impartial manner in which he has discharged the duties of the Chair.

Upon motion of Dr. Hays, the Convention then adjourned, *sine die.*

Second Meeting of the Association of Medical Superintendents of American Institutions for the Insane.—The Association of Medical Superintendents of American Institutions for the Insane, held its second meeting at Coleman's hotel, in the city of Washington, on the 11th of May, 1846, the President, Samuel B. Woodward, M. D. in the chair, and Thomas S. Kirkbride, M. D., Secretary.

Present.—Dr. Samuel B. Woodward, of the Massachusetts State Lunatic Hospital, Worcester.

Dr. James Bates, of the Maine Insane Hospital, Augusta.

Dr. Andrew McFarland, of the New Hampshire State Hospital, at Concord.

Dr. William H. Rockwell, of the Vermont State Hospital, at Brattleboro.

Dr. Luther V. Bell, of the McLean Asylum for the Insane, at Somerville, Mass.

Dr. C. H. Stedman, of the Boston Lunatic Asylum.

Dr. N. Cutter of the Pepperell Asylum, Mass.

Dr. George Chandler, of the Massachusetts State Lunatic Hospital, at Worcester.

Dr. John S. Butler, of the Connecticut Retreat, at Hartford.

Dr. Amariah Brigham, of the New York State Lunatic Asylum, at Utica.

Dr. Pliny Earle, of the Bloomingdale Asylum, New York.

Dr. G. H. White, of the Hudson Lunatic Asylum, New York.

Dr. James Macdonald, of the Private Institution, Flushing, at New York.

Dr. Thomas S. Kirkbride, of the Pennsylvania Hospital for the Insane, Philadelphia.

Drs. Stewart and Fonerden of the Maryland Hospital.

Dr. J. P. Stokes, of the Mount Hope Asylum, at Baltimore.

Dr. William M. Awl, of the Ohio State Hospital, at Columbus.

Dr. John M. Galt, of the Eastern Asylum of Virginia, at Williamsburgh.

Dr. J. W. Parker, of the South Carolina Hospital, at Columbia.

Dr. Walter Tellfer, of the Lunatic Hospital, at Toronto, Canada.

Dr. William M. Awl, of the Ohio State Hospital, was elected Vice-President of the Association, in the place of Dr. Samuel White, of Hudson, deceased.

Reports were received and read from various committees, appointed at the last meeting of the Association. On the subject of the Moral Treatment of Insanity by Dr. Brigham; on the Medical Treatment of Insanity by Dr. Woodward; on Restraint and Restraining Apparatus by Dr. Bell; on the Construction of Hospitals for the Insane, by Dr. Awl; on the Jurisprudence of Insanity, by Dr. Ray; on the Organization of Hospitals for the Insane, by Dr. Kirkbride; on the Statistics of Insanity, by Dr. Earle; on Asylums for Idiots and the Demented by Dr. Brigham; on Chapels and Chaplains in Insane Hospitals, by Dr. Butler; on Post-mortem Examinations, by Dr. Kirkbride; on Asylums for Coloured Persons, by Dr. Gall; on the Proper Provision for Insane Prisoners, by Dr. Brigham. An essay on the Construction of Hospitals for the Insane, was also read by Dr. Bell, and the subjects embraced in the reports were fully discussed by the members of the association.

The following preamble and resolutions were adopted: Whereas, since the last meeting of this association, Dr. Samuel White, of New York, the venerable and highly respected late vice-president of this association has died: Therefore

Resolved, That by the death of Dr. White, this association and the medical profession have lost an esteemed and valued member, and the cause of humanity, a useful and active friend. Particularly have the friends of the insane reason to mourn his loss, as he had long been successfully engaged in relieving the sufferings of this afflicted class of his fellow beings, and by his labours and his writings essentially aided in improving their condition.

Resolved, That we deeply sympathize with the surviving members of his family, and recall, at the present time, the excellencies of his character, his useful precepts, and the worthy example he presented of a gentleman, physician, and Christian, devoted to deeds of goodness, and whose long and active life was spent in promoting the welfare of his fellow men.

Resolved, That Dr. Brigham be requested to prepare an obituary notice of the late Dr. White, to be entered upon the minutes of the association, and to be published.

Resolved, That the secretary of this association present a copy of these resolutions to the nearest relative of the deceased.

The following resolutions were also adopted by the association during its different sessions.

Resolved, That the resolution of the last meeting, relative to members of the association, be so amended as to read as follows: That the medical superintendents of the various incorporated or other legally constituted institutions for the insane, now existing on this continent, or which may be commenced prior to the next meeting, and all those who have heretofore been medical superintendents and members of this association, or who may be hereafter appointed to these stations, be and they are hereby constituted members of the association.

Resolved, That in future, each regularly constituted institution for the insane on this continent may have one representative in this association; that as heretofore this shall be the medical superintendent, where such officer exists, but in those institutions in which there is a different organization, it may be either of the regular medical officers who may find it most convenient to attend.

Resolved, That the subjects upon which committees were appointed at the first meeting of the association, be continued, each in the hands of the chairman of the respective committees, to be reported upon at the next meeting.

Resolved, That in addition, each one of the following subjects be confided to a single member of the association, who is hereby requested to report at the next meeting of the association.

1. Treatment of Incurables, Dr. Macdonald.
2. Is there any relation between Phrenology and Insanity, Dr. Fonerden.
3. The Classification of Insanity, Dr. Earle.
4. The Admission of Visitors into the halls of the Patients, Dr. Ray.
5. Visits to, and Correspondence with Patients by their friends, Dr. Stokes.
6. The Comparative Value of the different kinds of Manual Labour for Patients, and the best means of employment in winter, Dr. Rockwell.
7. The proper Number of Patients for one Institution, Dr. Brigham.
8. The utility of Night Attendants, and the propriety of not locking Patients doors during the night, Dr. Chandler.
9. The Advantages and Disadvantages of Cottages for wealthy Patients, adjacent to Hospitals for the Insane, Dr. Kirkbride.
10. The Relative Value of the different kinds of Fuel for heating Hospitals, Dr. Bates.
11. Insanity and the Condition of the Insane in the British provinces, Dr. Tellfer.
12. The Nature and Treatment of Insanity produced by the use of Intoxicating Liquors, Dr. Stedman.
13. The Relations of Menstruation to Insanity, Dr. Fonerden.
14. Under what circumstances can the Insane of the Poorer Classes be properly treated with the greatest degree of Economy, Dr. McFarland.

15. The Effects upon the Insane of the use of Tobacco, Dr. Cutter.
16. Reading, Recreation and Amusements for the Insane, Dr. Galt.
17. On Water-Closets in the wards and yards of Hospitals for the Insane, Dr. Bell.
18. On the Construction and Arrangement of Institutions for the Insane in southern climates, Dr. Parker.

Resolved, That the members of this association be urgently requested, with the concurrence of the friends of patients, to make post-mortem examinations in all cases of insanity, which may prove fatal while under their care, and to report the result of their observations at the next meeting of the association.

Resolved, That each member of this association be requested to ascertain the facts and circumstances, (such as sex, age, civil state, vocation, mode and other matters susceptible of being tabularized) of each case of suicide, occurring in his respective state, between the first day of January and the last day of December, 1847, and forward an abstract of the same, as soon after the latter date as convenient, to the chairman of the committee on suicide; it being understood that in states having more than one member, they be requested to divide their states by certain territorial limits.

Resolved, That it be recommended to the officers of the different institutions for the insane in this country, to have engraved previous to the next meeting of the association, a view and ground plan of their respective establishments, and of a size that will permit their being bound with their annual reports.

Resolved, That a committee of three be appointed to publish in a collected form, the transactions of the association, or, under certain circumstances, such parts of the same as they may deem expedient.

Resolved, That the essays presented to this association are understood to be the opinions of the chairmen of the different committees by whom they have been reported, and do not necessarily express the sentiments of other members relative to their details.

Resolved, That in case the committee do not publish any of the essays, their writers then have the privilege of publishing them in a separate form, should they deem it expedient to do so.

Resolved, That the secretary be directed to publish an abstract of the proceedings of the association in the American Journal of Insanity, the American Journal of the Medical Sciences, and the New York Journal of Medicine.

The association continued its sessions till the evening of the 14th of May, and adjourned to meet in the city of New York, on the second Monday of May, 1848, at 10 o'clock, A. M.

By order of the Association.

THOMAS S. KIRKBRIDE, *Secretary*.

DOMESTIC SUMMARY.

Case of Melanosis.—In our foreign summary (p. 252,) will be found an account of two cases of melanosis of the eye, with some interesting remarks by Wm. Lawrence, Esq. In connection with this subject the following case of the same disease recorded by Dr. HENRY W. DESAUSSURE in the *Southern Journ. of Med. and Pharm.*, (March, 1846,) will be read with interest.

D. M., an Irishman of fine muscular figure, dark hair, complexion, and eyes, was a frequent inmate of the Poor House Hospital, of Charleston, between the years 1832 and '38. He always entered the hospital to be treated for affections, incident to the loose, disorderly and intemperate life which he led. In November, 1842, he was again admitted, labouring under a mild form of conjunctivitis. He had now, however, lost much of his fine muscular figure, was somewhat emaciated; he stated his general health to be good, and only complained of the affection of the eye, for which he had entered the hospital. Upon examining the left eye, besides the symptoms of a mild form of conjunctivitis, there was seen a small round black tumour, about the size of a hazelnut, seated upon the external side of the globe of the eye, about four lines posterior to the junction of the cornea with the sclerotica, resembling very much an ebony ball cut in half, with the cut surface applied to the eyeball. The cornea was perfectly transparent, and the aqueous humour clear, but the crystaline lens had a dark hue, as if some dark fluid had been equally and uniformly diffused through it; vision was almost destroyed in that eye, the patient being but barely able to distinguish light from darkness. How long the tumour had existed could not be ascertained, as the patient was entirely unaware of its existence, and believed the sight of that eye as good as the other, until convinced of the contrary by actual experiment. The ophthalmia was of four or five weeks' existence. Under a mild antiphlogistic treatment, the inflammation was relieved, and he left the hospital in December.

In August, 1843, eight months after, he was again brought to the hospital. He was now very much emaciated, his countenance expressive of much suffering, and of that peculiar earthy cadaverous hue, indicative of great structural disease. He stated that about six weeks before, feeling some weight and pain in the right hypochondrium, he had examined the part, and felt a large hard body there. From this period, the pain gradually increased in severity; he lost his appetite and strength, and vomited frequently, after taking food. Upon examining the abdomen, the liver was found much enlarged, extending to within two inches of the crest of the ilium; it was hard and knotty to the touch, and he complained of severe pain in that region; the stomach could not retain more than ℥ii of food taken at a time; there was scarcely any appetite. The tumour of the eye had increased in size, but had become flattened by the pressure of the orbit. The patient now began to emaciate rapidly, the pain in the right hypochondrium was relieved by an anodyne, and never returned; the quantity of food retained by the stomach became gradually less, until in the last few days he could not retain more than one or two drachms of anything. In the fortnight which preceded his death, he occasionally vomited a small quantity of dark brown mucus. He died five weeks after his admission, in the last stage of marasmus, having suffered no pain after the relief given by the anodyne; without hectic, diarrhœa, or night sweats.

Autopsy fourteen hours after death. Upon cutting through the abdominal walls, an extensive layer of black matter was found deposited between the peritoneum and the abdominal muscles. This layer extended in a continuous sheet, from one iliac crest to the other, and from on a level with the umbilicus downwards to the pubis and thence deeply into the pelvis; it was three or four lines in thickness, of tolerable consistence, and presented, when cut into, a striated appearance, the striæ, consisting of fine whitish lines, running in various directions. In the midst of this layer were some masses of rather greater thickness than the rest, and apparently separated by a distinct cyst, formed by condensation of the cellular tissue. The peritoneum could be removed by careful dissection, and then was transparent, presenting no traces of melanotic infiltration. The thin fluid which exuded by pressure from this layer of black matter stained the fingers of a dark brown hue. The abdominal muscles presented no traces of melanosis, and the whole layer was deposited in the cellular tissue, lying between the peritoneum and muscles of the abdomen and pelvis. The omentum, and the surface of the intestines, were studded with innumerable quantities of black tumours, varying in size from that of a pea, to a hazelnut. Upon examination these tumours were found to be seated between the layers of the peritoneum, forming the omentum, and between the peritoneum and the muscular coat of the intestines; they were contained in thin cysts, formed apparently of condensed cellular tissue; they were of the consistence of animal jelly, and easily mashed by the fingers, which were tinged of a dark hue. The striated appearance visible in the layer lining the abdominal walls, was much less visible in these;—in the hardest it could be traced, but not at all in the softest. The peritoneum covering these bodies was uniformly transparent when removed, and there were no traces of either recent or ancient peritonitis. The folds of the mesentery likewise contained a large number of black tumours, exactly similar in appearance and consistence to those last described. The mesenteric glands were somewhat enlarged and of a dark hue, but were not indurated when incised and pressed,—the thin dark coloured fluid which escaped did not tinge the fingers as the other tumours did. The kidneys were healthy, presenting no appearances of melanosis. The spleen enlarged. The liver was very much enlarged, extending downwards nearly to the iliac crest, and almost reaching the median line forwards—it was of a mottled black hue, and bosselated appearance. When removed from the body it weighed 10lbs. The natural structure of the liver was scarcely any where visible—here and there might be seen small islands, as it were, of a glandular structure, but the chief mass of the organ was made up of black and white tumours, varying in size from a walnut to a hen's egg. The black tumours were the largest and most numerous, but least consistent, each inclosed in a thin cyst; when incised they offered a striated appearance similar to that mentioned in describing the masses found beneath the abdominal muscles; they were of considerable consistence, creaking under the scalpel, and the thin serous fluid which exuded from their incision was quite black, staining linen and the fingers of the same hue. The whitish tumours were harder, less numerous, and of rather less size; cutting like cartilage, their cut surfaces presented the appearance of septa dividing each tumour into one or more lobules. In some of these white masses the colour approached to gray, but in none were there any black spots or lines, and the thin fluid which exuded was nearly colourless. The gall bladder was small and contained about ℥i of a very dark ropy fluid; a piece of linen dipped into it was stained dark green, with a very slight tinge of yellow.

The stomach was contracted, its mucous membrane of a dull gray colour, thickened and softened; there were no traces of melanotic deposit upon or beneath the mucous membrane of either the stomach or intestines.

The heart was hypertrophied, but no melanosis was found in or upon it.

Both lungs were adherent to the costal pleura by old adhesions. The lungs themselves were healthy in structure, except that in the upper part of the superior lobe of the left lung there was a melanotic tumour about the size of a hickory nut, completely enclosed in a cyst, the surrounding pulmonary tissue being quite healthy. This tumour, when incised, presented the same striated appearance as those of the liver.

The brain and its membranes offered no morbid appearances of any kind. Immediately above the left supra-orbital ridge of the frontal bone, and about the external termination of the superciliary ridge a mass of melanosis was found occupying the space between the dura mater, to which it was attached, and the skin, the intervening tissues, including the bone, having been removed by absorption The internal surface of the dura mater, at the points where the tumour was attached, was smooth and unaltered, while externally several vessels of considerable size were seen making their way down to the tumour. The opening in the frontal bone was sufficiently large to admit the little finger: the tumour was covered by a cyst, and was unattached, except to the dura mater, from which it seemed to have sprung. It was very soft, being easily crushed by the fingers; no stria or septa were visible. Upon carefully removing the left eyeball, upon which the tumour had been observed during life, it was seen that this tumour, about ten lines long by six broad, was divided by a deep depression into two nearly equal parts Upon incising the anterior portion it was found to be covered by a thin black membrane, to which it adhered but very slightly, exactly similar in structure to the choroid coat. This membrane, after very careful dissection, was found to be the choroid coat itself, which had been pushed outwards by the gradual increase o the tumour, and had thus formed a hernia through the sclerotica—this latter having been destroyed at this point by ulceration. The tumour itself was inclosed in cyst, and, lying immediately behind the iris, it had no intimate connections wit any of the surrounding parts; was of moderate consistence, and when cut int presented a striated appearance. The posterior part of the tumour was lying upo the sclerotica immediately behind the opening, through which the anterior pro truded, and was firmly adherent to this membrane, the two portions being separated by a dense septum. The crystaline lens and vitreous humour were perfect and unaltered in structure, but were tinged throughout of a dark hue, looking as if slightly smoked; the colour could not be removed by washing. The muscles of the eyeball were not implicated in the disease.

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Trismus Nascentium.—Dr. V. N. Wooten of Lowndesboro', Ala., in a letter to the editors of the *New Orleans Med. and Surg. Journ.*, (No. May, 1846,) states that trismus nascentium is of fearful frequency in the cotton plantations of his section of Alabama. "I am not prepared," he remarks, "to compare it with other maladies in respect to frequency, but I believe that it destroys more negroes than any other single disease, in this region of country. In a practice of ten years amongst these plantations, I have seen a great many cases. Sometimes, I have found it of such frequent occurrence, as to present the appearance of an epidemic. Yet *I have never seen a white child afflicted with the disease.* Is this the case in New Orleans?

"Again: I have never seen a case of *decided* trismus nascentium, that did not prove fatal. Indeed, so well is this characteristic of the disease now known, that it is very generally deemed utterly useless to call in medical aid, after the initiatory symptoms are well developed.

"I have tried every plan of treatment which books, or the most anxious study on my part could suggest, but all wholly in vain.

"I have made post-mortem examinations in several cases, and found the pathological appearances as uniform as in any other disease. They are as follows:—Heavy vascular engorgement of the peritoneum throughout its whole extent, denoting the highest inflammation. All the portion surrounding the entrance of the umbilical cord into the abdomen, for a circumference of from one to three inches, was in a gangrenous condition. The liver was unnaturally heavy and stiff, with its veins fully injected with fluid blood. There was also heavy engorgement of the substance and membranes of the base of the brain, and along the medulla oblongata, and cervical portion of the spinal marrow.

"I have usually observed the first symptoms to make their appearance about the time the umbilical cord comes away, and from this I at first supposed that it was the effect of awkwardness in dressing the navel by the ignorant midwives who usually attend on the plantations, but careful investigation led to nothing conclusive on this point.

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Extra-Uterine Fœtation—Gastrotomy—cure.—Dr. Alex. H. Stevens relates in the *New York Journal of Medicine*, (May, 1846,) a case of extra-uterine fœtation, in which a full-grown fœtus was successfully extracted by him, about ten years after conception, by the operation of gastrotomy.

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Tincture of Water Pepper in Amenorrhœa.—Dr. Eberle states that he has found no remedy so effectual in the cure of amenorrhœa as the tincture of water pepper, (*Polygonum Hydropiperoides*, Mich.; *P. Punctatum*, Elliott.)

Dr. T. L. Ogier, in a paper in the *Southern Journal of Med. and Pharm.*, May, 1846, also extols it as the most certain of our emmenagogues, and relates four cases successfully treated by it. He says that he knows of no medicine that has a more decided action on the uterus in producing the menstrual discharge. The preparation used by Dr. O. was a strong tincture made from the stem, leaves, and flowers; but he thinks that the active principle of the plant resides chiefly in the leaves. The dose was a teaspoonful of the tincture, three times a day in a little sweetened water.

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Medical Schools of the United States.—From the Catalogues of these Institutions, which we have received, it appears that during the past year the number of students was nearly 5000, and that the degree of M. D. has been conferred upon 1300.

UNIVERSITY OF PENNSYLVANIA.

At a public Commencement held April 3d, 1846, in the Musical Fund Hall, Locust Street, the Degree of Doctor of Medicine was conferred by the Rev. John Ludlow, D. D., Provost, upon the following gentlemen: after which an address was delivered by Dr. William Gibson, Professor of Surgery.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Albright, J. B. E.	Earville, Pa.	Animal Heat.
Alexander, Clark H.	Lewistown, Pa.	Acute Dysentery.
Anderson, Benjamin, S.	Haverford, Pa.	Scarlatina.
Archer, Powhatan	Velasco, Texas,	Epidemic Cholera.
Ash, James	Philadelphia, Pa.	Scrofula.
Baldridge, Joseph H.	Gallatin, Tenn.	Sulphate of Quinia.
Baruard, Williams	Jeffersonton, Ga.	Insanity.
Benson, Edwin P.	Marion, Ala.	Remittent Fever.
Bieber, Daniel H.	Womelsdorf, Pa.	Cholera Infantum.
Blount, H. Wistar	New Berne, N. C.	Origin and Non-contagiousness of Yellow Fever.
Baskervill, Robert D.	Waverley Honor, Va.	Syphilis.
Bozeman, James F.	Milledgeville, Ga.	Bilious Remittent Fever.
Brown, Benjamin F.	Westmoreland, Va.	Respiration.
Brown, George W.	Marion, Ala.	Remittent Fever.
Brown, Samuel J.	Norfolk, Va.	Anatomy and Functions of the Sympathetic.
Browne, Robert Bethell	Easton, Pa.	Scarlatina.
Burr, Richard	Philadelphia, Pa.	Myopia.
Caldwell, L. F.	Milton, Pa.	Cynanche Trachealis.
Cannon, Robert H.	Sommerville, Tenn.	Cathartics.
Cheek, William A.	Warrenton, N C.	Cynanche Trachealis.
Clarke, Edward H.	Boston, Mass.	Pneumonia.
Cobb, Gaston D.	High Rock, N. C.	Typhoid Pneumonia.
Colony, George D.	Keene, N. H.	Erysipelas.
Crisp, David H.	Prospect Hill, N. C.	Calomel.
Cummins, James	Lewistown, Pa.	Colica Pictonum.
Davis, David M.	Camden, N. J.	Constipation.
Dearing, John J.	Flint Hill, Va.	Dysentery.
De Graffenried, Edwin F.	Columbus, Ga.	Reproduction of Animal Life.
Deyerlé, Charles P.	Salem, Va.	Hæmorrhois.
Donaghe, Briscoe B.	Staunton, Va.	Scarlatina.
Dortch, Isaac F.	Rocky Mount, N. C.	Sulphate of Quinine.
Dougherty, William	Appling, Ga.	Acute Hepatitis.
Duke, Abram B.	Georgetown, Ky.	Cynanche Trachealis.
Du Val, John Pope	Tallahasse, Florida,	Marsh Miasmata.
Eborn, John R.	Greenville, N. C.	Influence of the Genital Organs.
Eichelberger, John B.	Pomaria, S. C.	Intestinal Worms.
Farrar, Caleb F.	Natchez, Missis.	Leucorrhea.
Fechtig, Samuel C.	Clear Spring, Md.	Principles of Diagnosis.
Field, Furman	Milford, N. J.	The Influence of the Mind on Health.
Fisk, Samel A.	Cambridge, Mass.	Cynanche Trachealis.
Fleming, George C.	Jacksonville, E. Flor.	Masturbation.
Gaines, Edmund P.	Mobile, Ala.	Lithic Acid Diathesis.
Gaines, Thomas J.	Richmond, Va.	Asthma.
Garland, John S.	Detroit, Mich.	Acute Hepatitis.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Gibson, J. Gregg	Winchester, Va.	Stricture of Urethra.
Gloninger, C. D.	Lebanon, Pa.	Tubercular Consumption.
Gower, Leonidas F.	Nashville, Tenn.	Aneurism.
Greene, Francis	Philadelphia, Pa.	General Diagnosis.
Hagan, Robert	New Orleans, La.	Chronic Gastritis.
Hallowell, Jonathan	Philadelphia, Pa.	Iodide of Potassium.
Hamilton, Joseph C. H.	Mobile, Ala.	Yellow Fever.
Harris, James S.	Lewisburg, Pa.	Chorea Sancti Viti.
Harrison, Benjamin	Charles City, Va.	Intermittent Fever.
Hawkes, Athern B.	Frederick, Md.	Secale Cornutum.
Hinkle, Franklin	Philadelphia, Pa.	Medicinal properties of Argenti Nitras.
Holmes, Joseph F.	Rodney, Missis.	Puerperal Fever.
Holmes, Robert R.	Hernando, Missis.	Cynanche Trachealis.
Horner, Charles	Gettysburg, Pa.	Empyema.
Huff, Halloway	Centreville, Missis.	Acute Rheumatism.
Herman, Alfred J.	Kutztown, Pa.	Abnormal Menstruation.
Jackson, William R. A.	Gainsville, Missis.	Typhoid Fever.
Jacobs, William S.	Leesburg, N. C.	Acute Dysentery.
Johnson, J. Foster	Murfreesboro, Tenn.	Pleuritis.
Jones, William H.	Boydton, Va.	Opium, &c.
Ketchum, George A.	Mobile, Ala.	The Morbific Effects of Remedies.
Kinney, William, Jr.	Staunton, Va.	Acute Laryngitis.
Ker, George	Eastville, Va.	Hæmoptysis.
Lang, John H.	Mobile, Ala.	Signs of Pregnancy.
Lawrence, George W.	Baltimore, Md.	Delirium Tremens.
Leiper, Armstrong	Philadelphia, Pa.	Hysteria.
Lesley, Allen Voorhees	Delaware City, Del.	Erysipelas.
Lewis, G. W.	King George C. H., Va.	Scrofula.
Litchfield, John D. M.	Abington, Va.	Polypus Uteri.
Love, William Abram	Camden, S. C.	Placenta Prævia.
Lowe, John T.	Huntsville, Ala.	Delirium Tremens.
Magruder, Julian	Frederick, Md.	Gun-shot Wounds of the Thigh, &c.
Marable, Thomas E.	Lawrenceville, Va.	Inversion of the Uterus.
Marriott, Robert H.	Raleigh, N. C.	Pleuritis.
Marshall, Nathaniel B.	Leed's Manor, Va.	Scarlatina.
Massie, Thomas E.	Hot Springs, Va.	Rationale of Endosmosis.
Mercer, William W.	Philadelphia, Pa.	Apoplexy.
Millard, Henry J.	Leonardtown, Md.	Tetanus.
Miller, Matthias H.	Gloucester C. H., Va.	Scarlatina.
Miller, Robinson	Norfolk, Va.	Inguinal Hernia.
Minge, David	Petersburg, Va.	Medulla Spinalis.
Moore, Council W.	Marion, Ala.	Acute Gastritis.
Moore, Meriwether G.	Huntsville, Ala.	Auscultation of the Respiration and Voice.
Morgan, William M'K.	Pittsburg, Pa.	The Blood.
Morris, William S.	Montpelier, Va.	Uterine Hemorrhage.
Musser, William	Lewisburg, Pa.	Hemorrhoids.
Morrow, James	Charleston, S. C.	Hyperæmia.
M'Lean, Alexander S.	Harrisburg, Pa.	Compat. of Pract. of Med. with Pract. of Religion.
M'Clure, W. A.	Clarksville, Tenn.	Signs of Pregnancy.
M'Intosh, James C.	Knoxville, Tenn.	Tetanus.
M'Kennan, Thomas	Washington, Pa.	Bronchocele of Monongahela Valley.
M'Kibbin, David J.	Middleton, Pa.	Acute Iritis.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
M'Laurin, Lauchlin	Westville, Missis.	Congestive Fever.
M'Nairy, Bartlett Y.	Greensboro, N. C.	Cynanche Trachealis.
Nelson, Robert W.	Frederick, Md.	Iodine.
Nowell, John L., Jr.	Charleston, S. C.	Inflammation.
Nowlin, James	Rocky Mount, Va.	Pneumonia.
Oakford, Samuel J.	Philadelphia, Pa.	Colica Pictonum.
Oakman, Erwin H.	Augusta, Ga.	Tobacco.
Ogden, Benjamin Russel	Trenton, N. J.	Typhus Fever.
Overstreet, James T.	Washington, D. C.	Acute Peritonitis.
Parker, C. Collins	Philadelphia, Pa.	Diseases of the Heart.
Passmore, Thomas	Philadelphia Co., Pa.	Scarlatina.
Paxton, John W.	Knoxville, Tenn.	Malaria.
Peck, Erastus W.	Pearisburg, Va.	Red Sulphur Springs.
Perry, Nathan	Bigbyville, Tenn.	Remittent Fever.
Pierce, Moses G.	Williamston, N. C.	Atmospheric Air.
Powell, Thomas S.	Lawrenceville, Va.	Dysentery.
Probst, Franklin A.	Easton, Pa.	Hæmorrhoids.
Quin, Daniel H.	Holmesville, Missis.	Dyspepsia.
Reading, Alfred	Trenton, N. J.	Organic Life.
Reidenaur, J. A.	Lebanon, Pa.	Onychia Maligna.
Reynolds, Bernard B.	Lewisburg, Va.	Animal Heat.
Robb, Edward C.	Gallatin, Tenn.	Medicine an Inductive Science.
Robertson, Flavius J.	Nashville, Tenn.	Cinchona.
Rose, Robert W.	Norfolk, Va.	Syphilis.
Ross, J. Smith	Bath, N. H.	Fistula in Ano.
Ruff, Orlando C.	Newberry, S. C.	Cold as a Morbific Agent.
Sanders, Robert A.	Smithfield, N. C.	Intermittent Fever.
Schneck, Benjamin F.	Lebanon, Pa.	Inflammation.
Scott, Martin P.	Fauquier, Va.	Dysentery.
Seay, John, Jr.	Nashville, Tenn.	Blood in Phlegmasia.
Shantz, Tilghman P.	Allentown, Pa.	Amenorrhœa.
Sharber, Joseph W.	Eagleville, Tenn.	Typhoid Fever.
Shields, Thomas P.	Cartersville, Va.	Anatomy and Physiology of the Kidneys.
Shoemaker, William L.	Georgetown, D. C.	Phthisis Pulmonalis.
Skipwith, George N.	Genito, Va.	Vesical Calculi.
Steinberger, J. Dunott	Philadelphia, Pa.	Origin of Malaria.
Stout, W. Ten-Broeck	Allentown, N. J.	Chronic Bronchitis.
Strawn, James J.	Philadelphia, Pa.	Gonorrhœa.
Strong, Elisha H.	Colbert, Missis.	Dysentery.
Swift, Wesley	Yanceyville, N. C.	Acute Gastritis.
Summers, John E.	Middleburg, Va.	Puerperal Peritonitis.
Talbott, David L.	Cincinnati, Ohio.	Vis Medicatrix Naturæ.
Taliaferro, Alfred W.	Gloucester C. H., Va.	Delirium Tremens.
Tarry, William L.	Boydton, Va.	Tertian Fever.
Thompson, John H.	Unionville, S. C.	Gastritis.
Tucker, George W.	Natchez, Missis.	Yellow Fever.
Turner, Joel L.	Lincolnton, Ga.	Capillary Circulation.
Tyler, John Eugene	Westborough, Mass.	Iodine.
Vincent, Francis R.	Petersburg, Va.	Dysentery.
Walker, Amos	Philadelphia, Pa.	Electro-Magnetism.
Walker, William E.	Brunswick Co., Va.	Cholera Infantum.
Waller, Matthew P.	Williamsburg, Va.	Dysentery.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Walton, Franklin B.	Cross Plains, Tenn.	Scarlatina.
Ward, Andrew J.	New Milford, Pa.	Modus Operandi of Medicines.
Waring, Thomas L.	Ayletts, Va.	Respiration.
Watson, Barron C.	Germantown, Pa.	Influence of the Brain on the Organic Functions.
Welford, J. Spotswood	Fredericksburg, Va.	Acute Pericarditis.
White, Benajah L.	Williamston, N. C.	Fungus Articuli.
White, Henry O.	Salem, Mass.	Tetanus.
Whitfield, Needham H.	Aberdeen, Missis.	Remittent Fever.
Wickham, Robert C.	Taylorsville, Va.	State during Pregnancy.
Williams, James E.	Port Royal, Va.	Fracture of the Femur.
Williamson, Jacob W.	Ringoes, N. J.	Scarlatina.
Wirtz, Horace Raguet	Philadelphia, Pa.	Hereditary Disease.
Wistar, Caspar	Philadelphia, Pa.	Origin and Progress of Medicine.
Wootton, William T.	Rockville, Md.	Tetanus.
Workman, Thomas J.	Camden, S. C.	Puerperal Fever.
Yonge, Easton	Columbus, Ga.	Tuberculosis.

At a Public Commencement held in July, 1845, the following gentlemen received the Degree of Doctor of Medicine.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
William Fuqua.	Virginia,	Acute Peritonitis.
Joseph Sackett Hart,	Pennsylvania,	Diarrhœa,
William W. B. James,	South Carolina,	Acute Gastritis.
Timothy Thorp,	Alabama,	Uterine Hemorrhage.

TOTAL, 168.

W. E. HORNER,
Dean of the Medical Faculty.

New Publications.—The following interesting works have recently been published by Messrs. Lea & Blanchard:

PHILLIPS on the Nature, Causes, Treatment, &c., of Scrofula. See Review in the present No. of this Journal.

CARPENTER's Elements of Physiology. (See notice in this No., p. 179.)

SIMON's Animal Chemistry, Part II., completing the work.

HORNER's United States Dissector. This work has been entirely re-written.

A new edition of DUNGLISON's Medical Dictionary.

KIRBY & SPENCE's Elements of the Natural History of Insects. This work treats of the manners and economy of insects, their metamorphoses, food, stratagems, habitations, societies, hybernation, instinct, &c. &c. &c.

Works Preparing for Publication.—We have pleasure in announcing the following valuable works as being in preparation for publication by Messrs. Lea & Blanchard:

CARPENTER's Animal Physiology, revised by the author for republication in this country. Also Comparative Physiology, by the same author.

ROYLE's Manual of Materia Medica and Therapeutics. We have seen a portion of this work; the illustrations are very beautiful.

JONES' Treatise on Ophthalmic Medicine and Surgery.

Small Books on great subjects. Some of these are well worthy the attention of the profession.

HASSE's Pathological Anatomy of the Organs of Circulation and Respiration.

METCALFE on Caloric. See Review in this Journal for April last.

A complete Medical Botany, by Dr. R. E. GRIFFITH. With numerous illustrations.

UNIVERSITY OF PENNSYLVANIA.—MEDICAL DEPARTMENT.

SESSION OF 1846-47.

The Medical Lectures will commence on Monday, November the 2d, and be continued, under the following arrangement, to the middle of March ensuing:

Practice and Theory of Medicine, - -	By Nathaniel Chapman, M.D.
Chemistry, - - - - - -	Robert Hare, M.D.
Surgery, - - - - - -	William Gibson, M.D.
Anatomy, - - - - - -	William E. Horner, M.D.
Institutes of Medicine, - - - - -	Samuel Jackson, M.D.
Materia Medica and Pharmacy, - - -	George B. Wood, M.D.
Obstetrics and the Diseases of Women and Children,	Hugh L. Hodge, M.D.

Clinical Instruction at the Pennsylvania Hospital.

The rooms for Practical Anatomy will be open from October 1st, to the end of March ensuing. John Neill, M. D., Demonstrator.

Extensive cabinets of Anatomy, Materia Medica, Chemistry, Surgery, and Obstetrics, exist, and are in a course of annual improvement.

The Professor of Materia Medica, besides his cabinet, has a large and well furnished Conservatory, from which are exhibited, in the fresh and growing state, the native and exotic Medicinal Plants.

W. E. HORNER, M. D., *Dean of the Medical Faculty.*
263 *Chestnut Street, Philada. June 1st,* 1846.

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1846—7.

The regular Course of Lectures will commence on Monday, the second day of November, and end on the last day of February.

Robley Dunglison, M. D., Professor of Institutes of Medicine.

Robert M. Huston, M.D., Professor of Materia Medica and General Therapeutics.

Joseph Pancoast, M.D., Professor of General, Descriptive and Surgical Anatomy.

John K. Mitchell, M. D., Professor of Practice of Medicine.

Thomas D. Mutter, M. D., Professor of Institutes and Practice of Surgery.

Charles D. Meigs, M.D., Professor of Obstetrics and Diseases of Women and Children.

Franklin Bache, M. D., Professor of Chemistry.

Every Wednesday and Saturday during the Course, Medical and Surgical cases are investigated and prescribed for before the class. During the past year not fewer than 1,000 cases were treated, and upwards of 172 were operated on. The Clinical Lectures are so arranged as to permit the student, should he desire it, to attend the Medical and Surgical practice and Lectures at the Pennsylvania Hospital.

On and after the first of October, the Dissecting Rooms of the College will be open under the direction of the Professor of Anatomy and the Demonstrator.

Owing to the large size of the class, which numbered 469 during the last session, it became expedient to make extensive and important alterations in the College edifice. These will be completed by the first of September.

R. M. HUSTON, M.D., *Dean of the Faculty.*
No. 1 *Girard Street.*

FRANKLIN MEDICAL COLLEGE OF PHILADELPHIA.

The first annual course of Lectures in this Institution, (which was incorporated by the Legislature of Pennsylvania January 28th, 1846,) will be opened on Monday, October 12th, (second Monday in October,) and will be continued till the end of the ensuing February.

PROFESSORS.

Paul Beck Goddard, M. D., *Anatomy and Histology.*
C. C. Van Wyck, M. D., *Principles and Practice of Surgery.*
Meredith Clymer, M. D., *Principles and Practice of Medicine.*
John Barclay Biddle, M. D., *Materia Medica and Therapeutics.*
David Hunter Tucker, M. D., *Obstetrics and Diseases of Women and Children.*
Levin S. Joynes, M. D., *Physiology and Legal Medicine.*
James B. Rogers, M. D., *General and Organic Chemistry.*

John Barclay Biddle, M. D., *Dean of the Faculty.*

Joseph Leidy, M. D., *Demonstrator of Anatomy.*

FEES.

For each of the seven Courses of Lectures, - - - - - -	$15 00
Matriculation Fee, to be paid once only, - - - - - - -	5 00
Diploma Fee, - - - - - - - - - - - - -	10 00

July, 1846

MEDICAL DEPARTMENT OF THE COLUMBIAN COLLEGE, WASHINGTON, D. C.

The Lectures will commence on the 2d Monday in October, from which time, until the 1st Monday in November, two Lectures will be delivered daily. The regular Course will commence as usual on the first Monday of November, and continue until the first of March.

Harvey Lindsly, M. D., Professor of Pathology and Practice of Medicine.
Thomas Miller, M. D., Professor of Anatomy.
John M. Thomas, M. D., Professor of Medical Jurisprudence and Physiology.
William P. Johnston, M. D., Professor of Obstetrics and the Diseases of Women and Children.
Charles G. Page, M. D., Professor of Chemistry.
Joshua Riley, M. D., Professor of Materia Medica and Therapeutics.
John Frederick May, M. D., Professor of Surgery.
Johnson Eliot, M. D., Demonstrator of Anatomy.

Clinical Lectures will be delivered twice a week, and operations performed before the class on patients from the Infirmary, which is attached to the College, and from the public Dispensary.

The Rooms of Practical Anatomy afford advantages rarely equalled; they will be opened on the first of October.

The entire expense of a Course of Lectures by all the Professors is $80. Demonstrator's ticket, $10. Good board can be procured at from $2 50 to $3 00 per week.

WILLIAM P. JOHNSTON, M. D., *Dean,*
(*corner of 7th and F streets.*)

NEW HAMPSHIRE MEDICAL INSTITUTION—DARTMOUTH COLLEGE.

The *Fiftieth Annual* Course of Lectures will commence August 3, 1846, and continue sixteen weeks.

Hon. Joel Parker, LL. D, Professor of Medical Jurisprudence.
Dixi Crosby, M. D., Professor of Surgery and Obstetrics, and Diseases of Women and Children.
E. E. Phelps, M. D., Professor of Therapeutics and Materia Medica, and Lecturer on Med. Botany.
O. P. Hubbard, M. D., Professor of Chemistry and Pharmacy.
J. Roby, M. D., Professor of Theory and Practice of Medicine and Pathological Anatomy.
E. R. Peaslee, M. D., Professor of Anatomy and Physiology.
Franklin Bonney, Demonstrator of Anatomy.

Fees for the Course—payable in advance, $50. Matriculation, $5. Graduating expenses, $18.

E. R. PEASLEE, *Secretary.*

Hanover, N. H., May 20, 1846.

UNIVERSITY OF NEW YORK.

The Lectures in this Institution will commence on the last Monday of October, and continue four months.

Valentine Mott, M. D., Professor of the Principles and Operations of Surgery, with Surgical and Pathological Anatomy.
John Revere, M. D., Professor of the Theory and Practice of Medicine.
Granville Sharp Pattison, M. D., Professor of General and Descriptive Anatomy.
Martyn Paine, M. D., Professor of the Insitutes of Medicine and Materia Medica.
Gunning S. Bedford, M. D., Professor of Midwifery and the Diseases of Women and Children.
John William Draper, M. D., Professor of Chemistry.
William H. Van Buren, M. D., Prosector to Professor of Surgery.
William Darling, M. D., Demonstrator of Anatomy.

The fees for a full Course of Lectures amount to $105. The Student can attend one or more of the Courses, as he may be disposed, and pay only for the Lectures for which he enters. The fee for the Diploma is $30. The Matriculation fee is $5. The fee for admission to the Dissecting Rooms and Demonstrations is $5.

The most ample opportunities for Clinical Instruction will be afforded to the Students of the University, and the facilities for Dissection will be all that can be desired. The *materiel* is abundant and cheap. The Dissecting Rooms will be open on the first of October.

The New York Hospital, fifteen minutes walk from the College Buildings, is visited daily; and the Students have an opportunity of studying the various Medical and Surgical diseases of that Institution.

The Eye and Ear Infirmary, in which more than 1,400 patients are prescribed for annually, is open to the Students.

The University Surgical Clinique is attended every Saturday at the College Buildings by Professor Mott, and the University Students witness the various operations performed by the professor. More than 600 patients, affected with every variety of malady, are brought before the class during the session.

The University Lying-in Charity, under the charge of Professor Bedford, is ample in its arrangements. During the past five sessions more than 1,200 cases of Midwifery have been attended by the Students of the University.

In addition to these facilities for clinical observation, there are the various Dispensaries and Charities of the City, containing not less than 40,000 patients, presenting every possible aspect and character of disease.

Excellent Board and Lodging can be had in the vicinity of the College for $2 50 to $3 per week.

The number of Students in attendance the last session was 407; and the degree of Doctor of Medicine was conferred on 135.

N. B.—Students, on arriving in the city by calling at the College Building, 659 Broadway, and asking for the Janitor, will be conducted to boarding-houses.

Any further information respecting the Institution can be had by addressing the Secretary, Professor Draper, 659 Broadway. By order.

JOHN W. DRAPER, *Secretary.*

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The Annual Course of Lectures in this Institution will commence on the second Monday in November next, upon the following branches;

Anatomy, - - - - - -	J. E. Holbrook, M. D.
Surgery, - - - - - -	E. Geddings, M. D.
Institutes and Practice, - - - -	S. H. Dickson, M. D.
Physiology, - - - - - -	James Moultrie, M. D.
Materia Medica, - - - - -	Henry R. Frost, M. D.
Obstetrics, - - - - - -	Thos. G. Prioleau, M. D.
Chemistry, - - - - - -	C. U. Shepard, M. D.
Demonstrator, - - - - -	St. Julian Ravenel, M. D.

Clinical instruction will be delivered at the Marine Hospital, Alms-House and College Hospital.

Good Boarding can be obtained at from three and a half to four dollars per week

Specimens in Natural History will be thankfully received.

HENRY R. FROST, *Dean.*

PENNSYLVANIA COLLEGE—MEDICAL DEPARTMENT.

SESSION OF 1846—7.

The Faculty is composed as follows:—

William Darrach, M. D., Professor of the Theory and Practice of Medicine.
John Wiltbank, M. D., Professor of Obstetrics and Diseases of Women and Children.
Henry S. Patterson, M. D., Professor of Materia Medica and Pharmacy.
William R. Grant, M. D., Professor of Anatomy and Physiology.
David Gilbert, M. D., Professor of the Principles and Practice of Surgery.
Washington L. Atlee, M. D., Professor of Medical Chemistry.

The Lectures will commence on Monday, Nov. 2d, and be continued until the ensuing first of March. The commencement for conferring degrees will be held as early after the close of the session as practicable.

Regular public examinations on all the branches are held by the respective Professors.

The Faculty, not deeming it advisable to establish a College Clinic, will furnish a ticket to the Clinical Lectures at the Pennsylvania Hospital, Pine street, to each pupil in attendance upon a second Course of Lectures.

The Anatomical Rooms will be opened on the first of October, under the personal superintendence of Prof. Grant.

Three years study in the office of a respectable practitioner, and an attendance upon two full Courses of Lectures, one of which must be in this Institution, together with an attendance upon one Course of Clinical Instruction in some approved Hospital, are the requisites which entitle the pupil to become a candidate for graduation.

WM. DARRACH, *President of the Faculty.*
H. S. PATTERSON, *Registrar.*

MASSACHUSETTS MEDICAL COLLEGE, BOSTON.

The Medical Lectures of Harvard University begin annually at the Medical College in Boston, on the first Wednesday in November, and continue four months.

The great increase of the class has rendered necessary the erection of a new and splendid Medical College in Grove street, near the Hospital, which will be ready for occupation by the first of November.

The Massachusetts General Hospital has also been enlarged during the past year to more than twice its former dimensions, and will contain double its former number of patients.

Anatomy and Surgery by Dr. Warren.
Midwifery and Medical Jurisprudence by Dr. Channing.
Materia Medica and Clinical Medicine by Dr. Bigelow.
Principles of Surgery and Clinical Surgery by Dr. Hayward.
Chemistry by Dr. Webster.
Theory and Practice of Medicine by Dr. Ware.

Matriculation fee $3. Ticket for dissecting room $5. Hospital and Library gratuitously to those who attend the lectures.

WALTER CHANNING,
July, 1846. *Dean of the Faculty.*

TRANSYLVANIA UNIVERSITY.

The Medical Lectures will commence, as usual, on the first Monday of November, and continue four months, under the following arrangement:

The Principles and Practice of Surgery, by	Professor	Dudley.
Materia Medica and Therapeutics, by	"	Mitchell.
Chemistry and Pharmacy, by	"	Peter.
Special and Surgical Anatomy, by	"	Bush.
General and Pathological Anatomy and Physiology, by	"	Lawson.
Obstetrics and Diseases of Women and Children, by	"	Annan.
Theory and Practice of Medicine, by	"	Bartlett.
Demonstrator of Anatomy,	E. L	Dudley, M. D.

The whole Course costs $105; and as we have utterly abolished the *credit* system, *cash* will be invariably required. The matriculation and library ticket, is *five* dollars; the Hospital ticket, *five* dollars; dissecting ticket, *ten* dollars; graduating fee, *twenty-five* dollars. Boarding and lodging, from two to three dollars per week, fuel and lights included.

By order of Faculty.

Lexington, Ky., July, 1846. THOMAS D. MITCHELL, M. D., *Dean.*

OPIUM—ITS PREPARATIONS OF MORPHINE, &C.

CONTRASTED WITH

DR. M'MUNN'S CELEBRATED ELIXIR OF OPIUM.

In this valuable preparation is concentrated ALL that is useful in Opium as a medicine, and all that is injurious is entirely excluded. It exerts a powerful and controlling influence over the human system, producing the specific effect of an anodyne with entire safety and perfect success: it also comes cheaper to the consumer, is more readily administered, and more certain in its operation, than Opium in substance, and its great superiority to Morphine, Laudanum, Paregoric, Black-drop, Denarcotized Opium, and other opiate preparations, will be immediately observed on a comparison of their effects. Morphine, which is more generally used than any other preparation from the native drug, does not contain all its active principles, and therefore cannot alone produce all the peculiar and characteristic effects of so triumphant a remedy.

Three of the useful and active principles in Opium are entirely excluded from Morphine, viz. Codeine, Narceine, and the native Meconic Acid; hence in many cases is observed its inefficacy to produce the desired effect; but all these being retained in a natural state of combination, with the Morphine in the Elixir of Opium, its superior effects on the system are immediately apparent.

Those who take Opium and its ordinary preparations cannot be ignorant of the fact, that its distressing and pernicious effects result from the operation of its deleterious principles, and that the tremors, languor, and lassitudes with which its devotees are afflicted, and for which they repeat the dose to relieve, are sensations of its own creation. But in consequence of the exclusion of those deleterious principles from the Elixir of Opium, it is not liable to derange the functions of the system, nor injure the constitution and general health. And to those persons who, from necessity or other causes, have been accustomed to the use of Opium, this preparation will afford a gratifying substitute: it operates effectually as an anodyne, relieving pain and spasmodic action, which is the grand desideratum in its use.

TESTIMONIALS.

The particular attention of the reader is requested to the following testimonials from some of our most distinguished Physicians and Surgeons:

Having witnessed the effects of Dr. J. B. M'Munn's Elixir of Opium, we are of opinion that it is a valuable preparation, and recommend it to the patronage of the profession.

F. U. JOHNSON, M. D., Physician to the City and Marine Hospital.
JOHN W. FRANCIS, M. D., Late Professor of Midwifery in the College of Physicians and Surgeons, N. Y.
JOHN C. CHEESEMAN, M. D., Surgeon to the New York City Hospital.
RICHARD K. HOFFMAN, M. D., Surgeon to the Marine Hospital, N. Y., and late Surgeon in the U. S. N.
JAMES WEBSTER, M. D., Professor of Anatomy and Physiology in the Geneva Medical College, N. Y.

New York, February 18, 1837.

Certificate from Dr. Hulse, who used the Elixir for CONSUMPTION.

In the fall of 1834, I took the Influenza, which left me with Tubercular Phthisis attended with cough and expectoration, that I have not been free from a single day up to this time. During two years, I took Morphine, and occasionally of the other preparations of Opium, with some benefit, but as the disease gradually progressed, I became emaciated, and my digestive functions impaired, and was eventually obliged to dispense with Opium in any form. Since which time, until I began to take the "Elixir of Opium," which was in August last, I suffered much. I was so much annoyed by coughing at nights, that I was induced to get an ounce of this. I took 15 drops on going to bed, I slept well all night, without coughing or even turning in bed I have since increased the dose to two-thirds of a teaspoonful, which I continue to take with the same good effects. I have gained in strength, have a good appetite, which had been bad for more than a year, and I am so much better in my general health, and my cough so much diminished, that I cannot but wish the peculiar properties of this preparation were better known, both by the Profession and the public at large. I never expect to get well, but the comfort I derive from this medicine is greater than the wealth of India could afford. By it my digestive function is good; I eat well, drink well, and sleep well, and am able to take exercise, and cough only to dislodge expectorant matter, and have no pain.

Middletown, N. Y., June 28th, 1838. I. F. HULSE, M. D.

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Art. I.—*Remarks on the Use of Quinine in Florida, and on Malaria and its influence in that State; being the substance of a report made to the Surgeon-General U. S. Army.* By R. S. Holmes, M. D., Med. Staff, U. S. A.

Disease in Florida may be said to assume always a remittent form; and quinine being the most efficient anti-intermittent known, that medicine is of incomparable value in the treatment of the diseases of that state.

The experience of physicians in the south of France, in Italy, and in the southern States of the Union, shows that a much larger dose of quinine is necessary to check a fever in those countries, than in latitudes and regions where malarious influence is not so powerful.

From experience in Florida, one is almost disposed to believe, that there is a certain rule which though apparently too mechanical in its operations, to some extent is applicable; it is this,—in proportion to the amount of miasmata in the system as shown by its effects, so must the dose of quinine, for the cure, be increased or diminished.

The largest amount of quinine I have ever given at a single dose has been eighty grains; this is the extreme dose: the average quantity is about twenty grains.

Let us commence with intermittent fever. The first question I always ask a patient who complains of this disease concerns the state of his bowels. I am careful never to give quinine with the intestines in a torpid or gorged condition, for its effects then seem to be comparatively lost. I have given it, however, when the bowels were actively purged and irritated. It seems not to be governed by the general rule that medicines will not affect the system properly when the bowels have not been well attended to. Having then in a common intermittent fever freely opened the bowels, if they have not been already purged, by means of oil, magnesia, calomel, or rhubarb, I give the quinine, generally on the evening of the day on which the purgative has been taken, fifteen grains, say, as a general dose, *at once* (not in divided doses), in water with a few drops of vinegar or of some acid, so that it may be readily dissolved. Suppose this to be given in the afternoon at 3 P. M., the patient having had an attack of intermittent on the same day, commencing at 9 o'clock A. M. and ceasing at 2 P. M. The fever, being a quotidian, will come on, the succeeding day at the same time, despite the quinine; both the chill and fever will be of a lighter grade, but will be as distinctly marked, and will remain as long; but on the third day the patient will be entirely free from the disease, and will not experience, during any part of the day, the slightest symptom of it. In treating many hundred cases of fever in Florida I do not think I have met with twenty exceptions to this rule in cases of pure intermittent fever. The plan of blood-letting to cure the disease, or aid the operation of quinine, I have never practised, having had no occasion to do so; and being opposed, as a general rule, to blood-letting in this disease. If the bowels are in a good condition, I give the quinine immediately after the fever has abated, generally on the same day; in this as in every other disease I have encountered in Florida, always following the rule of checking it instantly. If the bowels are loose, I give the quinine combined with about twenty drops of laudanum, for it will often operate as a laxative, the tendency to which is easily checked. Occasionally, however, I have found a case where this dose (fifteen grains) was not sufficient, owing to what other cause than the idiosyncrasy of the patient, I never could determine; other things being attended to, however, I have never seen twenty-five grains check a simple intermittent fever. Nor do the effects of this agent seem to become inert on the system. Time after time, I have given the same number of grains, at every successive attack, to the same patients and always with the desired results The worst cases of intermittent are those in which the disease manifests an obstinate disposition to return; this return is, I think, most frequent on the seventh day, then the eleventh, fourteenth, twenty-first, and so on. A patient comes to you complaining of a chill: you may remember that he was lately on the sick report, and inquire when he had the last attack; he answers about a week ago; you examine your books and find this is the seventh day; you administer the quinine on the day he reports to you, no permitting the disease to continue an hour longer than possible; the day after he has a slight fever and chill, and on the third day of his admissio he is entirely free from disease, and is returned to duty, with the injunction (if you entertain certain views of the case) to report to you early o the sixth day, in order that you may anticipate the seventh; you administe the quinine in a fifteen grain dose at once, twenty-four hours before you expect the chill, and no symptoms of fever follow on the succeeding day; but on the fourth day after, namely, on the eleventh day, the patient has another fever and chill, as severe as any he has had heretofore; the disease destroyed in its habit of attack on the seventh day, has taken to the eleventh, and your second dose of quinine has been given for naught. If you follow up the attack and administer for the *eleventh day*, in anticipation, you will in all probability find that the disease has again shifted, either following or preceding that day; hence the rule which after many trials I have adopted, never to give quinine in order to anticipate an attack of intermittent fever, on a *critical* day; I have pursued the opposite system, and with such uniformly bad results, that to this rule I now most strictly adhere.

I never give the quinine during the fever or chill, simply on account of the difficulty of retaining it on the stomach at that time, and not that I believe, provided it was retained, it would operate less effectually, or produce injurious consequences.

On my arrival in Florida, knowing nothing of southern diseases from practice, and being stationed alone at a distant and unhealthy post, I learned the rules by experience alone, guided by which I have since successfully administered quinine. I practised on northern precepts, annoying the patient without arresting the disease, by a continued succession of two grain pills; occasionally at long intervals checking the disease by these means, but much more frequently vexed for weeks by the continued sickness of the soldier. I rose finally to ten grains, and continued to give this quantity at once; I more frequently succeeded by this practice, but not yet to my satisfaction. If the patient had a quotidian, I gave the quinine on the day of the chill; if a tertian, also on the same day; if successful with the ten grains, I was surprised to find the quotidian manifested itself in a modified degree on the succeeding day, and on the next was entirely absent; whilst of the tertian on the third day, not a symptom appeared; hence I drew the rule which I have often verified since, and from which I have never varied, or had any reason to doubt, that the full effects of quinine are not manifested until about eighteen hours after its administration. Finally, convinced that arge doses of quinine are necessary in the south, I increased my minimum dose for intermittent fever to fifteen grains given at once.

Congestive fever is of course a disease of much greater danger than the one we have been contemplating, and appears to be the disease proper in which the powerful and successful effects of this agent have been most apparent. This disease is remittent in its character; the grade of its violence. o the most casual observer, will appear much greater than any stage of intermittent fever; there is complete prostration; the faculties are benumbed, he countenance anxious and haggard, and the mind desponding; all these ymptoms are often present an hour after the first attack, and when you ee the patient for the first time. Here it is evident two plans of treatment must be pursued simultaneously:—to rally the patient for the time being and to provide for a periodical return. Frictions, mustard poultices, an stimulants, will answer the first design; but I know of no other agent tha quinine, in the materia medica, that will do for the second; you canno wait for its operation, if the prostration of the patient is so complete, tha you dread the return of the chill, lest it prove fatal; and in the first fe minutes after seeing the patient, I have given him from thirty to sixt grains of quinine in one dose, in water or brandy; the brandy for the present contingency, but the quinine for one several hours ahead.

If the attack is sudden, as a severe one of this kind generally is, and i the patient has not been sick previously, I have never found much difficulty in having the quinine retained; if it is not retained, and time canno be spared, I give it by enema. I have given the quinine in the highes stage of the fever, and in the lowest of prostration; never permitting an existing state of inflamed bowels or stomach to deter from its administration, or lessen the dose in which I would otherwise have given it; I hav not lost a patient from inflammation following congestion, and where th quinine has been given as here mentioned. I have not seen a patient di who survived after twenty-four hours from the time of attack. The fata cases are those in which the quinine has not been given in a proper quantity, or where it has not been thrown into the constitution for a sufficien length of time to reach the disease.

Ten distinct cases of congestive fever might be described, and exactl the same symptoms might be seen in every case; yet not two of the te would be similar in violence. During the last year of my army medic practice in Florida, I probably treated fifty cases of congestive fever; y two of these cases were so overpowering in their effects, the shock was s tremendous, and the termination of life so speedy, that the system seemed a if inoculated with some violent and consuming poison; death in both cas took place before the lapse of twenty hours from the first accession the disease. In such cases as these, "distrust is cowardice and pruden folly:" the symptoms seemed to be running into death speedily. In the fir case I gave eighty grains of quinine, twenty grains of calomel, and thre grains of opium, after giving my usual dose of twenty grains of quini when I first saw the case, and when the symptoms were trivial. (There a no cases that require more constant attention than these; the change symptoms is sometimes so hurried, that from comparative health the p tient will in thirty minutes time be nearly beyond relief.) The conge tion was on the thoracic viscera; the patient was perfectly conscious his situation, and an hour after he was taken, persisted in asserting that was "a dead man;" he complained of scarcely any pain; he felt a slig inconvenience about the breast, but his breathing was quick, and deep, a laboured; his chest, to the touch, was hot and dry; his legs, and head, a feet, of a proper temperature, until towards the close of the paroxys when these parts became, as they often do, of an icy coldness, (which must be carefully watched, and heat and friction applied;) his locomotion was easy, and until an hour before his death, he retained his reason, and powers of volition; he could not be induced to keep in his bed, but perpetually tossed to and fro, or jumped up to walk across the hospital floor; his pulse was not much accelerated; in the worst cases it does not reach over eighty-five or ninety; it is generally full and laboured, and easily compressed under the fingers; his stomach was in a good condition, and he easily retained anything on it; his bowels had not been moved since the attack, but readily answered to a large dose of oil given some three or four hours after the quinine was administered; his skin was dry; the secretion of urine was apparently stopped; I succeeded in getting a few ounces of blood from the arm, though it is against my practice to bleed in this disease; I cupped the breast freely, I kept warm fomentations to the legs and feet, and bowels, with friction kept up at intervals, when the hot and wet cloths were not applied; yet not one of these means seemed to stop for an instant the deadly onward course of the symptoms; the quinine, of which he had taken one hundred grains in four hours' time, did not affect him in any single particular that I could discover; involuntary discharges came on shortly before death; the body became prostrate, and but for the deep and heavy breathing, accomplished at long intervals, lifeless; the pulse was scarcely perceptible at the wrists, and indistinctly at the carotids; the heat of the chest to the touch was perfect to the last, and even the skin externally was suffused with blood; the extremities became as cold as dead flesh, the jaws were relaxed, the head thrown far back, and the arms extended at right angles to the body; I counted thirty to forty-five seconds between several of the final inspirations; and the powerful dragoon soldier had to yield at last, his robust strength and apparent powers of life not being competent for such an emergency.

In such cases as these I can compare the effect to no other operation that I have a knowledge of, than the overwhelming shock occasionally communicated by a severe wound; there is apparently the same want of a proper cause to account for death; no lesion of any vital organ may be perceptible; and the senses, and almost the strength of a perfect man, are retained to the end. A new reading of a great poet, may perhaps help us to explain the cause: the nerves are "jangled out of tune."

This patient had been five years in Florida; he had never been sick for a day's time before this; he was a large, strong and active man. The place where he died, Fort White, on the Santa Fe river in Florida, was always famed for its severe malarious diseases.

In a post-mortem examination of this case, these were the appearances:—The viscera of the abdomen were in apparently a sound and healthy condition; the contents of the cranium were in a healthy state; the skin around the whole circumference of the chest was discoloured by extravasated blood;

the vessels of the heart were deeply engorged with blood; the auricles and right ventricle were filled; and the lungs bled as if a sponge had been cut that was soaked in blood; the whole blood of the body seemed to have found a common reservoir in the thorax.

The foregoing case affords a good example of the rule by which we are guided in giving quinine in congestive fever. It is probably as well to give it during the intervals of the paroxysm, but we never wait for that time in cases of the slightest emergency; experience has shown that it is unnecessary, and I have frequently given thirty or more grains, where the fever was at its height, with the happiest effects. If the patient in the foregoing case could have surmounted the first attack, I have no doubt the quinine would have modified, or checked any subsequent one: but it was necessarily given too late to control the symptoms, and there always will be cases in which the excess of the paroxysm cannot be foretold.

No term was ever more properly applied to denote a disease than thi
term congestive; it has been said there is congestion in other fevers beside
this; so there is, but it is a congestion of as different a type as that betwee
typhus and intermittent; it is a congestion the end of which, however sligh
may be its onset, tends to a fatal termination; nor is it brought on purely b
the time of the paroxysm; any quick exciting cause, be it ever so trivial, th
entrance of a stranger, the firing of a gun, some one bursting suddenly int
the room, even the visit of the physician, will throw the blood from the ex
tremities, or more properly perhaps prevent its due propulsion into them; th
lips will become livid, the tip of the nose and ears cold, the feet and leg
cold, the cheeks blanched; and yet the patient, strange to say, will be uncon
scious generally that a change has come over him; all this too, independent
the regular periodic time, when the true paroxysm comes on. In the interval
he will be torpid, morose; his mind dull, slow in gathering up his thought
his pulse laboring and full and slow, his bowels sluggish, or if irritation ha
set in upon them frequently purged; the secretions from his liver, kidney
and skin, improperly carried on, or almost checked: if the congestion is o
the brain, he will complain of dull pain in the head, if on the thorax, h
breathing will be hastened, if on the abdomen, inflammation of the sma
intestines will probably soon set in, if the disease is not speedily checke
During the paroxysm the prostration is so great that the patient will n
make an effort for hours to move or turn in his bed; his feet, legs, han
and head will be all cold to the touch; yet he will not complain of bei
cold; over the point where the congestion exists, the heart will be som
degrees above the natural standard: you can scarcely get an answer to yo
questions, the patient looking you in the eye, and thinking for some secon
before he can collect his own thoughts and yours; his countenance is di
tressed and peculiar, and in many cases an experienced eye could tell
glancing at the patient, what is his disease; now in a case of this kind,
you have an aversion to large doses of quinine given at once; if you s

this agent produces great excitement in the brain, and there are already intense congestion and pain there, or that it produces irritation of the bowels, when there is congestion and probably irritation already existing; if this is the mode in which you reason, the probability is, that within the next few days your patient will die; for this fear of quinine, or of a large dose, *why* is not exactly known, has frightened many a patient into the grave, and will in time to come.

I never think of these objections without remembering a case that lately happened in the south, with the particulars of which I was acquainted. A person in whose recovery great interest was felt by a large circle of friends, was attacked by a dangerous remittent disease, with signs from the first day of inflammation, and congestion in the stomach and intestines. So great was the inflammation, as to lead one to doubt whether it did not take precedence of the disease peculiar to the climate, under which the patient was suffering; the evacuations from the bowels were frequent; the pain so great on pressure that the weight of the bed-clothes could scarcely be borne; the throbbings of the abdominal aorta could be as distinctly counted at the umbilicus as over the course of the carotids; the consequent weakness peculiar to all such irritations of the small intestines was great: this irritation had held out against all active agents, for six days, with scarcely any abatement; but conjoined with this, was the disease under which the patient was said to be suffering; towards nightfall of every day, the extremities would become cold, while the heat of the abdomen was always above its natural standard; the crown of the head, the lips, the fingers, the feet and limbs would be all cold and livid; this would be succeeded by a fever during the night, which would at last attain its acme about ten o'clock on the ensuing morning; during the day, the patient would lay in an exhausted state, until the evening again would bring about the same alarming cold stage; from some access of which so great was the prostration, that it might reasonably be feared a rally could not be made. The physician who had from the first attended the patient, a gentleman of skill in his profession, but impressed with the idea of the irritating power of quinine, had directed his whole efforts towards the irritation of the intestines, letting the fever run its course unchecked, lest the irritating power of the agent in dispute would aggravate every symptom. The question was asked him on the seventh day, how long he thought the patient could exist, with the fever at such a height as it had now attained? His answer was, not for forty-eight hours; and how soon would the simple irritation of the intestines terminate in death, if as uncontrollable as it had heretofore been? "Probably in three or four days." Why not then run this risk of inflammation, check the fever instantly by a large dose of quinine, and have but one disease to contend with? With great hesitation, forty grains of quinine were allowed to be given in two doses in twenty-four hours; the next paroxysm of the fever was trifling, and on the ensuing day banished. Every effort was now directed to the inflammation, which proved severe and obstinate, but from which, in the course of six weeks, the patient recovered.

The following is an analysis of the points of practice spoken of in the preceding remarks which I have always followed, with such results as to justify me in believing in their propriety.

Every periodical disease is to be checked immediately. Quinine, as a remedy for periodicity, is to be given regardless of any existing state of inflammation. Never give quinine in divided doses when directed for the immediate cure of a periodical disease. To be certain of the operation of quinine in a constitution with which you are not acquainted, it must be given eighteen hours before the desired result. In emergent cases it may be given in the lowest state of prostration, or the highest grade of the fever. As a general rule fifteeen to twenty grains will be necessary for an intermittent, and thirty to fifty, for a congestive fever. Never give quinine for the cure of a periodical disease in anticipation, when the periodicity exceeds five days.

In small doses quinine is a tonic, in larger doses its tonic is quickly followed by its stimulating property; but in grave periodical diseases I am disposed to think its sedative effect the one which tells most certainly; but to procure this in any perfection it must be given in a large dose; and here it seems to me has arisen the great discrepancy *in times*, at which quinine has been given; any dose of quinine that produces sedation, generally goes through a stimulating process; if this process happens at the onset of an intermittent fever, the fever will in all probability be checked by it; and hence you have cases in which quinine checks a chill when given immediately before it comes on; but it will be seen from the preceding remarks concerning the difference in the cure of a quotidian and tertian, that this immediate cure by stimulation is not so certain or effectual as the subsequent one, which I think is accomplished by the sedative effect of this article; in this sedative effect, I think, consists the great anti-periodic power of quinine. Tartar emetic in large doses is also a powerful remedy against periodicity by the same property; opium and belladonna also by the same and alcohol, piperine, capsicum, etc., by the possession of tonic and stimulating effects. If the sedative properties of tartar emetic could be procured independent of its tendency to irritate, I can think of no remedy for serious periodic diseases surpassing it, yet this property is not produced in any great degree by small doses of the article, nor does it follow the exhibition of the like doses of quinine.

It is the continued small doses of this agent that harass and irritate. A patient at the north takes one or two grains almost daily for weeks, until he has swallowed sixty or more grains in the course of a month, and then is indignant at the idea of a fifty or sixty grain dose being given at once in Florida, which suffices for the same period. As large an amount of calome may be taken at once with but little bad effect; but give it in divided doses and the result is irritation, fever, and ptyalism. Small continued doses of tonics, like quinine, cannot be given long with impunity. The most natural conclusion, if you would give quassia for weeks, would be that your patient would finally reject his food; his stomach would be debilitated instead of strengthened, and placed in a proper state to take on inflammation.

There is one great source of error to a northern physician, in reading the accounts of the large doses of quinine given at the south: this consists in the supposition that these doses are often repeated, while the truth is, the large dose generally suffices for the cure of the disease. It is the nature of intermittents of course to continue their attacks, when the patient resides in the same atmosphere that gave origin to the disease.

The result was as follows, in ascertaining how much quinine had been given to the ten men at a post in Florida, (the average number of men being 220,) who had taken the largest and most frequent doses:

Lewis, grains 220 in 6 months and 7 days.
Wise, grains 135 in 6 months and 8 days.
Sheriden, grains 95 in 5 months.
Nash, grains 140 in 3 months and 27 days.
Smith, grains 150 in 5 months and 2 days.
Johnson, grains 150 in 5 months and 6 days.
Bowers, grains 80 in 4 months.
Thomas, grains 120 in 5 months and 6 days.
Chapman, grains 100 in 4 months and 13 days.
Lord, grains 70 in 3 months and 26 days.

The names of these men were taken from the hospital books; they had taken more than any other ten men in the command; and it is somewhat singular that on the day this table was made out, not one of these men was on the sick report, nor had any one of them been on for several days previous. Under peculiar circumstances greater quantities of quinine may be taken by an equal number of men in the same time, though I think this is not an unfair representation of the amount given in Florida. You give fifteen grains for an intermittent, and the disease, for the time at least, is checked; with fifty grains at once in a congestive fever the like result is accomplished.

In diseases of this climate, eminently periodic in their character, and of a highly dangerous type, it will be apparent that the plan of giving quinine in divided doses cannot be entertained. The disease is one in which you cannot afford to lose so much time; many cases of fever are presented in which you are convinced the patient will succumb to a second or third paroxysm; the first of these may, with great certainty, be expected at the end, or before the lapse of twenty-four hours; and one would be operating by the rule of books, without ever consulting the evidence of his own senses, who would continue to give quinine in small doses up to the very hour of the expected and dreaded paroxysm. It has been seen that it requires eighteen hours at least for the full effects of quinine to be manifested; yet many physicians will give ten or more grains, in two grain doses, commencing about ten or twelve hours before the expected highest grade of the paroxysm; it is evident that scarcely a grain of quinine is here brought to bear on the fever: but will not the third paroxysm be checked by the ten grains, if that quantity is sufficient? It probably may, but be the quinine a tonic, a sedative, or a stimulant, you want its power in one of these respects concentrated on the fever. It cannot be thought strange that the practice at the north of giving quinine in divided doses, for bilious, remittent, and congestive fevers, should prove so unsuccessful. Though the fevers there do not require such large doses of this article as at the south, they require very different ones from those that are now given. I have known in Chester county, Pennsylvania, in a small district, one-fourth the number of patients die, who were seized with a pure miasmatic, congestive fever, differing from that of Florida only in its lighter grade; yet the disease, as treated by army surgeons in Florida, with quinine, was one of the least mortal, probably not more than one in forty cases proving fatal.

I had an attack of congestive fever in December, 1841, a month after I came to the territory, with which I lingered for three weeks on the verge of the grave, at a distant post, and with no better medical assistance or advice than I could give myself. A stranger to the powers of quinine, I took it in grain doses, for a fever which I am in the habit of checking now in a day's time, by drachms, instead of grains, of this great agent. The congestion was on the brain, the pain so intolerable that the slightest motion could scarcely be borne; the intolerance of light and sound perfectly tormenting to the senses; the muscular system weak, and languid; the eyes and cheeks cadaverous, and after a few days deeply sunken in. How often, subsequently, with all these symptoms at their height, have I given forty or fifty grains of quinine,—have seen its effects on the brain, aggravating for the time every symptom, or occasionally but slightly affecting the disease for some hours; and then, as the sedative effects came on, have beheld the patient drop into a composed sleep, his skin become moist and natural, (no better diaphoretic than this agent, in many states of the system,) and awake in six or eight hours, a man really free from disease; this may appear all exaggerated to those who have never seen congestion, or its treatment in this manner, but to any one who has, I appeal whether this description is not unvarnished truth.

This agent is essentially opposed to the periodic effects of malaria, nor are these effects by remission always apparent; nor do we give quinine only for fevers. They comprise but a small class of the diseases that remit; and this remission may be so slight, or brief, that neither the patient nor physician can discern it; and the degrees are of all grades, from the slightest alleviation of the symptoms, to the enjoyment of almost perfect health. We know of no disease occurring in a malarious region where remission may not be suspected, for there seems to be no disordered action that cannot be affected by this powerful agent. If the physician in the south can be blamed for his too great enthusiasm for the specific (if there is such a thing) for all these ills, he has certainly chosen a handmaiden worthy of his worship. To one accustomed to look at the slow and languid operation of medicines, in fevers at the north, and the want of faith with which they are so often given, the operations of this medicine appear miraculous: they are only equaled, when it has fair play, by its certainty.

The immediate effects of a large dose of quinine are, buzzing, and murmuring in the ears; a partial deafness, which often continues for twenty-four hours; a great sense of fullness about the head, and often a dull pain across the forehead; there is generally more or less excitement or partial delirium of the mind, without exciting the spirits in any degree. I have seen patients under the effects of quinine wander, and talk incoherently, as if from the influence of alcohol. Occasionally it will produce a pricking sensation in the skin, and a quivering in the muscles of the fingers and eyelids. One patient I knew who was always made perfectly insane, and beside himself so that he had to be confined, even by the administration of five grains of quinine. I have never seen any of these symptoms last much longer than twenty-four hours.

Many more severe effects have been remotely ascribed to quinine or rather to the large doses of it as given in the south, such as the enlargement of the liver, and spleen; inflammation of the stomach and bowels of a sub-acute character; a dropsical condition of the body; palpitation of the heart, etc. These effects were known to the world as sequelæ to intermittent and other fevers of a miasmatic origin, before quinine was ever given in its present doses, or in fact before it was known. I have never found any occasion to believe that quinine gives origin to inflammation. Chronic affections of the liver and spleen are incident to hot and malarious climates, without disease even as a cause. I believe them to be often the pure result of malaria. Enlarged spleens are quite common, chiefly with those who have suffered from intermittents, but frequently with persons who have never been sick, though living in a malarious district. There is one effect of quinine which I would not mention were it not proper to say whatever one believes and has seen: it is the soothing and quieting action that it exerts over the stomach and intestines. I have never seen this mentioned, but it has been frequently forced on my observation.

The effects of malaria are most evident in the convalescence of disease. This is a matter accomplished with great difficulty in the most sickly regions of Florida; and chiefly if the disease has been long in its continuance. From the effects of a severe fever, or dysentery, a patient will remain for weeks in *statu quo:* when on any day you might expect to find him well, until at last you examine the pulse attentively, and find that hectic has set in; the patient has night sweats; the bowels are loose; pain in the abdomen and head; emaciation comes on; the tone of the stomach is weakened; the secretions deranged; the skin improperly exerting its offices; the assimilating power acting improperly, and the vis vitæ irreparably shattered. This state of things I have only seen at the most unhealthy posts, especially at Forts Macomb and White, where I was first stationed when I came to the territory. I have sent patients from there to the general hospital at Cedar Keys, in this condition, of whom a causal observer would have said, they will not live to reach the island; yet no one could fix on any disease these men had: they were convalescing, and under the better atmosphere of the sea shore, they nearly all recovered.

One circumstance has often attracted my attention, in cases of diseases from miasmatic origin in this country; that is, the abnormal actions of the heart: its beats, if the patient has been weakened by disease, are so tumultuous and diversified, but afford withal so little sign of organic lesion, that if not acquainted with the former condition, your prognosis will be most unfavourable. I have seen, however, but few permanently bad results from this cause. If you strengthen the patient by tonics, and remove him to a more healthy spot, even in Florida he will recover. I look upon this as a deranged miasmatic nervous action in that organ, for which change of place and tonics afford the best cure.

I believe there is scarcely a person even in good health in a miasmatic region, who is not subjected in some degree to the effects of the unseen agent around him. His rest will be broken at night; his appetite will not be so good as formerly; he will not enjoy that feeling of full health he has been accustomed to; his system will be attacked from time to time by the offshoots of the diseases preying on others around him, though he will not be sick, and may escape with a like freedom from disease during all his sojourn in the country: but the whole constitution seems in some degree to labour under the influence of malaria; slight wounds that would heal elsewhere in a few days time, must here undergo the slow process of suppuration and granulation, and even this does not come on easily, the wound remaining for days without any visible advance towards a cure. You cannot persuade a slight incision of the skin to heal by adhesive inflammation; and I have repeatedly seen wounds in habits that were to all intents healthy, assume a deep burrowing suppuration. I was in the habit at first of discharging patients when the wound had closed by granulations, if not on an important part of the body, and not interfering with common duties; but on the slightest exercise or excitement, inflammation would set in afresh, in surrounding parts; the granulations would assume an unhealthy appearance; suppuration, if it advanced, would be slow in progress, and of an unhealthy form: perfect rest, good diet, occasionally tonics, and poultices or stimulants to the part, were necessary for a cure. Many of these wounds, especially about the fingers, ran rapidly into deep-seated inflammations. A miasmatic constitution of the atmosphere is particularly favourable to the formation of whitlows. I treated these by deep incisions, and generally, some hours after, sprinkled the part over with calomel; but the first incisions scarcely ever proved sufficient; the suppuration would extend beyond them. The pain of these whitlows will take on regular remissions.

Art. II.—*Account of a Blighted Fœtus of the third month, having the umbilical cord extensively coiled around the right knee and lower third of the thigh, discharged with a living child at full term: with some reflections connected with the questions of Superfœtation and Spontaneous Amputation.* By A. Lopez, M.D. (Read before the Medical Society of Mobile, Alabama, May 6, 1845.)

I present to the society this evening, a specimen of a *Blighted Fœtus*, whose history is as follows:

Louisa, a coloured woman, the mother of other children, was delivered by a midwife on the 10th March, 1839, of a *healthy living child* of perfect development, and at the full term of gestation. On Tuesday the 12th, I was summoned in great haste, and on my arrival found the conclave of old women terribly astounded by the discovery of a new subject, which had been thrust aside unobserved, on the day of parturition, among the soiled clothing and discharges from the uterus. Upon examination, it proved to be the specimen which I now exhibit. To all appearances it had attained its *4th month*, although it is with difficulty that we can accurately specify the early fœtal age, owing to the uncertainty as to the time of conception, and because, we all know how much the growth of different fœtuses varies. The skull is so entirely compressed as to expand its proportions and bring the opposite parietal surfaces in close contact. The entire body is likewise much distorted and flattened, doubtless from the pressure exercised upon its plastic nature by the uterus and the other child, for so long a period prior to its expulsion. There is not the slightest decomposition, and its aspect was even less unfavourable, before it had undergone such long maceration in the alcohol, necessary for its extra-uterine preservation. The membrane which you see was found separately discharged. I obtained no information concerning the placenta, but an additional interest is afforded to the case, from the fact, that the *umbilical cord, no larger than a small thread, will be seen entwined around the right knee and the lower third of the thigh.* It was much more so when I first possessed the specimen, but on its transportation from South Carolina to this place, the bottle was broken, the spirit evaporated and the entire surface covered with a thick mould, so that in my effort to clean it, the upper portion of the cord from the umbilicus to its attachment upon the thigh was unavoidably detached. I have said that this circumstance added interest to the case, and I so consider it, because, independent of other physiological questions to which such sports of nature give rise, and to which I shall presently refer, there is superadded, the problem of what some writers denominate "*spontaneous amputation*" in utero, from this condition of the cord as well as from other causes purely hypothetical. The upper extremities are very much deformed and displaced by the pressure, so that the left shoulder (with its scapulary connections) is entirely twisted over the back of the neck, giving it the appearance of arising from the same origin with the right.

I have given you the history—and you have the specimen for examination. Perhaps, in the true spirit of medical philosophy, as well as the common sense view of the question, it would be wise to leave it at this stage of its notoriety—because, to take one step further in speculation, is neither more nor less than to plunge into the same limitless, unfathomable sea of uncertainty, in which the ablest and most ingenious minds have invariably been lost, whenever they have attempted to solve the enigma of conception and generation. "Man is fearfully and wonderfully made" are the words of the inspired man of God, and he did no more than declare a truism, derived from the first incomprehensible creation of our race out of the "dust of the earth," to the present day, at which the same creative will, of the same Omnipotence, sends forth his creatures to fill the globe through the instrumentality of animal copulation. Trace this wonderful problem from the most insignificant mite, that owes its brief tenure of existence to equivocal generation, up through the almost endless chain, to *Man!* and say how much wiser are we now for all the labour of the mightiest intellects—the war of words—the rancour of controversy, and the arrogance of short-lived dogmas to which this high and as yet intangible question has been subjected? We breathe, we cry, we feed and perish! This is the sum total of our knowledge, and it is all we are likely to know of how a child is begotten, developed or perfected, because it is self-evident that it is the pleasure of the Creator, in his wisdom, to conceal what he listeth from our scrutiny.

Yet aware of all that I have said, I must be pardoned for trespassing upon your time, as I desire to submit to the society a few remarks upon four subjects collaterally belonging to the specimen now upon your table.

First. Is it a blighted fœtus of one conception?

Secondly. Can a dead fœtus be retained to full term with a living one?

Thirdly. Is this an instance of superfœtation?

Fourthly. What would have been the chances for spontaneous amputation had the fœtus progressed to maturity with the present condition of the umbilical cord?

These are all questions of laudable curiosity—nothing more; because, grant that we ever should, by the triumph of intellectual industry, tread the labyrinth in which they are now concealed—*cui bono*? The discovery could not avert the issue, it could not abate one jot of human suffering, nor could it shed one additional ray of lustre upon those immutable truths of physiology, pathology or chemistry, whose results are *practically* applicable to everyday purposes. This is the age of utilitarianism, and unless I am much deceived, we are every day completing its ascendency over the incitements to man's industry and ambition. The people now demand servants—they are tired out with philosophers.

Let us revert, then, to our first question—*Is it a blighted fœtus of one conception.*

I cannot consent to settle this either too summarily or presume to do it too definitely, inasmuch as other circumstances of an imposing character oppose such peremptory decisions. But in advance of further inquiry it may not be amiss to establish the fact that the discharge of *blighted fœtuses* is not of unusual occurrence, and that they do occur, both alone and simultaneously with others more mature. To the former class I shall for the present confine myself and I refer the society to the records of such similar cases as I have from 1839 to the present time collected. I will endeavour to condense their histories as much as possible.

1. The *Chevalier Galbiati*, in a communication to the *Med. Chir. Society of Naples*, Nov. 29, 1834, states that cases where the fœtus dies during utero-gestation and is retained to the full term, are not uncommon. He therefore reports the following. (*Gaz. Méd. de Paris*, Aug. 1835, from *Observ. Medico.*)

(*a*) The *Marchioness of M.* was affected during the 4th, 5th and 6th months of pregnancy with moderate discharges of blood from the womb. At the 4th month, the uterus was of equal volume as at the third. At the 6th the same as at the 5th, but less than at the 3d. During the 7th month hemorrhages more abundant, followed by pains and the *expulsion of a fleshy, fresh organized body* in which was contained a *fœtus shrunk and atrophied as if plunged in alcohol, apparently not over two months old.*

(*b*) The *wife of the Chevalier M.*, in the *third* month of gestation, fell from a carriage; slight hemorrhage; no pain; by proper means abortion prevented. She proceeded to the 5th month increasing in volume. At he 6th month the uterus opened, accompanied with hemorrhage. Size scarcely equal to the 3d month: pregnancy doubted. At 7th month, another low, but there being no sensible development, he concluded against pregnancy. At the 8th month she was allowed to resume ordinary diet, hitherto forbidden through fear of abortion. Undue indulgence produced another hemorrhage, resulting in the *expulsion of a shriveled fœtus about hree months old.*

(*c*) *La Marchesina G*—examined a short time previously to the 3d month, pronounced pregnant; increased to the 4th and 5th month. At the 6th month, traces of blood, and the uterus of less size than at the third. It was therefore decided that pregnancy had ceased to progress. At the 7th month hemorrhage and *expulsion of a fœtus, as large as the fruit of an almond, supposed to be less than three months old.*

2. *Dr. Porter*, of New London, Connecticut, reports a case of retention

of a dead fœtus in utero from the 5th month, and its expulsion at full term. *It was free from putrefaction.*

3. *Dr. Hays*, Editor of the *Amer. Jour. Med. Sci.*, reports in that periodical (Aug. 1837, p. 535) the case of a fœtus blighted between 3 and 4 months old, expelled at full term, *entirely free from putrefaction*, the umbilical cord several inches long, and as *small as a thread.* Nine months antecedently the mother conceived; ceased to menstruate, and suffered all the attendant circumstances of conception. About the period of quickening flooded profusely; this ceased; she progressed and quickened, after which the breasts became flaccid, her size diminished, and she carried the fœtus to full term.

4. In the *Lond. and Ed. Monthly Jour. of Med. Sci.*, for October, 1841, is reported a case taken from *Journ. de Chir. et de Med. Prat.*, for May, 1841, in which *Dr. Brett* of Guingamp, relates an instance of *delivery at full term of a fœtus dead* 4 *months previously.* It was six inches long, skin rather reddish; *epidermis not removed by friction;* it appeared to be 5 months old.

These facts demonstrate that the human embryo is frequently from som cause, blighted or arrested in its progress towards a perfect and mature development, and that notwithstanding its privation of those elements essential t its well-being, or, as the French would express it, "*faute d'aliment*," it stil can be retained in the uterus, and preserved from the decomposition inciden to all dead matter, whether animal or vegetable. And it is further proved, tha this organ of exquisite sensibilities and diffusive sympathies—which feel itself (so to speak) called upon to dislodge all offensive and foreign substance ay, even its own nurtured offspring, whenever its innate susceptibilitie notify it of the necessity—encourages the presence of a substance whos extinguished vitality, one would suppose, might prove not only a sourc of irritation to itself, but prejudicial to the integrity of the healthy an living fœtus. How and why is this? I shall, before I conclude this pape be compelled to refer to its solution, but with the faintest of all faint hop of success.

I now pass to the next branch of the subject:—*Can a dead fœtus b retained to full term with a living one?* The specimen now on yo table answers affirmatively. Is this an isolated case, or are they not rath of frequent occurrence? I will offer no apology for consuming yo time with the details of such analogous cases as I have from time to tim harvested, for my own instruction. The case then is not isolated, nor rare occurrence, where a *fœtus blighted at early age is retained and e pelled at full term with a living child.*

Dr. Defermon, of Paris, communicated to the *Med. Soc. of Emulation*, case where the first child was born healthy and well developed, and wi a perfect placenta, *to which there adhered a mass which proved to be second child* with its secundines. It was a *flattened fœtus* apparent arrested at the third month. The mother thinks the duration of her pre nancy was ten and a half months. (*Bulletin des Sci. Méd.*, July, 1829

Dr. Colombe delivered a woman in 1827, naturally, at full time. T placenta attracted his attention—it was divided into two distinct parts,-

very different in their volumes and anatomical relations. The membranes of the defective placenta were entire and *contained a fœtus apparently four months old, deformed and flattened,* skin shriveled, pale, and *slightly livid.*

N. B. About the third month the mother was much fatigued and suffered from anorexia, pains in the abdomen, hips and pelvis. (*Oper. cit.*)

Dr. Ingleby, Lecturer on Midwifery, &c.,—favourably known as the author of an excellent work, entitled "*Facts and Cases in Obstetrical Medicine, &c.*" reports in that work the following account: In a case of pregnancy a healthy placenta was expelled by hemorrhage. In the membrane adherent to the uterine surface, there was found *a four months fœtus* enclosed within its membranes. It was *flattened but not putrid, and in connection with the same placenta there had just been expelled a healthy, full sized child.*

In the *London Lancet,* Oct. 30, 1841, *Dr. Streeter* relates a case to the Westminster Med. Soc., as occurring in the practice of *Dr. Hughes. One fœtus was alive at full term, the other blighted,* having perished apparently at the third month—consequently retained nearly six months after its death. It was probably expelled during the labour a few minutes before the placenta. *It had undergone very little decomposition and was squeezed quite flat.*

Collins, (*Practical Midwifery,* p. 317,) records *three cases* where one fœtus was blighted at an early period and retained until the other was nearly or completely developed.

Cruveilhier (*Anatomie Pathologique*) relates *one case.*

The most remarkable case, however, of any that has met my eye, is recorded by *Dr. Robert Lee,* who saw a case of *triplets,* two of which perished at the third or fourth month, were retained to the full term of gestation and then expelled, attached to the placenta of a living child.

M. Menard, of Nantes, relates (*Lond. and Edin. Monthly Journ. of Med. Sci.,* Oct., 1841, from *Journ. de Loire Infer.*) the birth of one fœtus five months old, *dead and atrophied, the other, living, healthy, and at full term.* The first he describes as "putrilage cremeux," in detached pieces, the remainder of which had finally to be extracted by the fingers, *in one dry, soft, and flattened mass.* Two hours afterwards a healthy, living child was born.

Dr. Perkins, of New London, in a letter to Dr. Porter, May 16th, 1840, relates as follows. On the 18th April, 1840, he delivered a woman of a *healthy male child, full term,* weight nine pounds, the patient did well. *That night she expelled a fœtus* enveloped in the membranes; it was between four and five months old, *entirely undecomposed,* of natural colour, perfect in form for that age, *except the head, which was compressed.*

Mauriceau (*Dis. of Women with Child, &c.,* Ed. 1688, p. 44,) gives the case of a young woman *delivered at the usual term* of two children, *one of ordinary size, the other dead,* in third or fourth month of its age.

These instances, for the present, conclude the second division of my subject, and serve to exhibit one of the irregularities likely to occur in the function of an organ in which we would expect *á priori,* to find an uninterrupted chain of cause and effect, and from here we proceed to our next enquiry, viz.—

Is the specimen before you a case of Superfœtation?

In order even to approach a satisfactory hypothesis we must be content to take an infinite number of questionable propositions for granted, else, groping as we do, with our eyes hoodwinked, the further we proceed the worse would confusion become confounded.

It were profitless to call your attention to the various theories, which, ingenious and short-lived, gave place to one another through each cycle of human speculation. Yet it may be well to defer further consideration for a while, and summarily inquire what is understood by *superfœtation.*

As early as the time of *Hippocrates* he defined it to be "*a reiterated conception, when a woman being already with child, conceives again the second time.*" Passing down from that epoch to the most recent understanding of the question, we reach the definition given by *Mr. Guy,* in his late valuable work on "*Medical Jurisprudence,*" who calls it "*The conception of the second embryo, during the gestation of the first,* the products of the two distinct conceptions being born, *either at the same, or at different times.*" (p. 109.) Thus we perceive that these two definitions differ only in phraseology, but are identical in substance, so that there exists no difference in the meaning of the term through this vast interval of time, however the learned may have disputed ad interim, as to the *modus operandi,* or even its possibility. We will proceed now to examine if there be any instances on record which approximate more nearly to the probable limits of this category, than those cases which I have hitherto cited.

I shall commence with two cases, whose history is more familiar to me than others—both of them having occurred within a short distance of my former residence in South Carolina.

The *first,* I have received from several very old and veritable persons, whose parents lived cotemporaneously with the event, and it is the case referred to by Buffon, and quoted by all subsequent writers since his day as the "*American Case.*"

The *second* occurred at a plantation on the *Pee Dee River,* not more than eighteen miles from my residence, and I have frequently seen one o the children. The history of the "American case" is this:—Between Charleston and Georgetown, (S. C.,) on the stage road, there was a smal settlement, now uninhabited, but still called, from the event, "*Mulatto Town.*" A white man first, previously to leaving his bed at daylight, had connection with his wife—and left her to call his negroes to labour. In a very short time after he sent his negro to the house on some errand, where he found the woman yet in her bed, and he *also copulated with her,* according to some accounts, through her salacious entreaties; others said she yielded to his threats of taking her life, (which, by the way, would defea conception, if the views of some medical jurists be correct.) Be it as i may, in due time *she was delivered of two healthy living children, on white—the other mulatto.*

The Pee Dee Case.—On the plantation of a gentleman, about thirt years ago, there was employed an Irish overseer. He entered the hut o a negro one morning and copulated with his wife, just as he had left he to go to his work, first having connected with her himself. In regular process of time the negress was delivered of *two healthy, live-born children, one perfectly black—the other a light mulatto.* They were both, I think, alive in 1840, when I left Carolina. The mulatto boy I know was. He was named after his white father, and was a likely, intelligent man, about twenty-five years of age, and the favourite body servant of his master.

Dr. Walsh, in his "Notices of Brazil," (vol. 2d page 90,) relates the case of a creole woman who gave birth to *three children at one time, one white, one brown,* and *one black.* Each child had the features of its respective class.

Mosely (Dis. of Trop. Climates, p. 111) reports the case of the "Ohortwood Estate" at the island of Jamaica, where a negress brought forth *two children* at a birth, *one a negro,* the *other a mulatto.* When interrogated as to an explanation, she answered, that a white man on the estate came to her hut one morning before she had risen and she suffered his embraces almost instantly after her black husband had quitted her.

Zacchias, in his "Consilea," (see Guy, p. 110, who also refers to the two preceding cases,) states this case. *J. N. Sobrejus* lost his life in a quarrel, leaving his wife pregnant. *Eight months afterwards,* she was delivered of a dead and deformed child. *One month subsequently,* she gave birth to a perfect living child.

Foderé (vol. i. p. 484–6), cites the case of the wife of Raymond Villard, of Lyons. She was delivered on 20*th Jan.* 1780 of a living 7 months child. On the 6*th July following,* (five months after delivery,) she was delivered of a living daughter.

Beck, (*Med. Jurisp.* vol. i. p 222,) reports that *Dr. Maton* delivered a woman of two male children perfectly developed *at intervals of nearly hree calendar months. Beck* quotes other cases, viz., three at intervals f *one month,* three of *two months,* and one of *four months.*

Pliny tells of a servant girl who *copulated the same day with two several ersons.* She gave birth to two children. *One resembled the master, and he other his proctor.* (Vide *Mauriceau,* p. 42.)

Delmas, surgeon at Rouen, delivered a woman at the hospital, of *two nale children at one birth,* at 8th month of gestation. *One was white, the ther tawny,* placenta united. She confessed that *she had cohabited with white man, but twice had yielded to the importunities of a negro, when he supposed she was* 4 *months advanced.* (*Amer. Journ. Med. Sci.,* Aug. 828, p. 421.)

Dr. Jamieson, of Dublin, relates of a lady who was confined of a healthy hild which she nursed, and *seven weeks afterwards,* she brought forth *ano-her of six months gestation,* with membranes entire and placenta attached. t was from 8 to 9 inches long. The first was born 13th Feb., the last 3d pril 1841. The *dead fœtus had remained in the uterus forty-nine weeks. Dub. Journ. Med. Sci.,* Sept. 1841.)

John Irvine, surgeon, British navy, records the case of a woman deli-ered by *Dr. Burleigh* on the *first of October* of a female child, at full eriod of utero-gestation; healthy, rather small sized. Placenta expelled three hours by natural contractions. On the 2d Nov. she gave birth a healthy large male infant. Placenta followed in two hours. (*Med. imes,* Dec. 28, 1844.)

Dr. Pertus (*Rev. Med.,* March 1838) gives the following case. Pregancy, June, 1837. On 20th September, slight hemorrhage with pains sting eight days. Examined the coagula and discovered a *fœtus* 3 *months* *old* with its annexes, and *subsequently an entire ovum, in which was a fœtus of* 5 *weeks old.* (Vide *Amer. Journ. Med. Sci.*, 1838, p. 454.)

Smellie ("Cases of Midwifery," *Ed.* 1754, vol, 2d, p. 85) reports a case occurring in the practice of Mr. Campbell. A woman delivered of her first child, followed by severe after pains. *Five days after* she miscarried of a fœtus, 4 *or* 5 *months old, still born, no signs of putrefaction,* having neither hair *nor other signs of having been longer conceived.* Smellie wrote to Mr. Campbell, "what you have written me seems to favour the doctrine of superfœtation, *more than anything I have met with in practice.* But there are instances of extra-uterine fœtuses which have laid whole years in the abdomen without being putrefied."

In the *Providence* (*R. I.*) *Gazette*, Aug. 1845, the following case is reported:—"A coloured woman in the town of Bristol was on Friday week delivered of a *black child*, and on the Sunday following of a *white one.* The first was very black, and the last as white as children of white parents ordinarily are. The children have been seen by nearly the whole town of Bristol, and the facts are corroborated by *Drs. Holmes and Briggs*, who attended on both occasions of child-birth."

In the *Amer. Journ. Med. Sci.*, July 1842, p. 220, a case is contributed by Prof. Beck, taken from the *Bulletin de l'Acad. Roy. de Paris*, (Séance, Dec. 21, 1841.) The article is headed *Superfœtation*, but I do not think that it legitimately belongs to that classification. *M. Renaulden* attends a female who aborts in the sixth month of pregnancy; she died under severe symptoms of puerperal peritonitis seven days after. Dissection discovers a uterus with *a double neck and two cavities*, with an ovary, fallopian tubes and ligaments to each. Hence it is inferred that "superfœtation *might* have occurred." I do not recognize a case to be one of superfœtation, unless the anatomical structure of the receiving parts is normal, and the reiterated deposit of germinal matter is received *cæteris paribus.* It requires no stretch of the imagination, nor tax upon our assent, to acknowledge that with two distinct receptacles and two distinct sources of supply each should be capable of appropriating to itself its peculiar burden. The genital conformation of numerous animals sanctions this admission, but this is not what a rigid inquiry would demand as definitive. The idea of superfœtation is strictly confined to the possibility (denied by our opponents) o a single uterus receiving the ovum for a second child, *after those action are set up within the uterus and its appendages, which are declared to b antagonistic to such a result.* I have deemed it proper to notice this cas briefly, and I apply it to all such other instances as have been or may b adduced. I do not wish the argument trammeled; it asks only for th irrefragable proof, such as the case I have given from the Providenc Gazette, and others of like kind, where the *different colours* of the childre paralyze theories.

The last case I shall offer is from *Casper's Wochenschrift*, Jan. 28, 1842 A black woman of Surinam copulated during the same night with a *negr* and an *European.* She was delivered of *two children, one a negress, th other a mulatto.* Dr. Hille, a Dutch surgeon, attached to the army a Surinam, states that in 1841 the children were alive and then eight year old. He adds that at the death of the mother, who died previous to th period, an examination revealed the *genital parts to have been perfectl natural in their structure.*

While preparing this essay I have been informed by a friend, of a cas which occurred about 1830 in Virginia. The authority is strictly veraciou and the parties from whom the information was derived are of the highest respectability and intelligence. A negress at the time of corn harvest was met by a *negro man* in a remote part of the field, who copulated with her. On her way back a short time after, she was encountered by the *white man* to whom she was hired and he performed the same act for her. In due time she brought forth *two children, one perfectly black, the other mulatto.*

Having completed the narration of such human cases as I had collected, I will conclude this part of the question by an *alleged case of superfœtation in a goat*, as communicated to *Dr. Berjaud* by *Dr. Pertus.*

The animal had received the caresses of the ram *in the beginning of Dec.* 1836 and was supposed to have fecundated. She however continued to manifest a desire for the male, *and was gratified fifteen days afterwards.* In the beginning of May she brought forth two young, perfectly formed, but refused to suckle them, and they perished. The abdomen remained large, and in 15 days more she brought forth *three others perfectly formed*, and seemed very anxious to nourish these. They lived three days. N. B. The term of gestation in goats is five months, at which period, the first two were born, and the *number of young generally two*, but never more than three.

The recital of cases bearing so similarly upon one subject has perhaps proved tedious, but as they were the result of some years' collection, I thought that while they answered no immediate purposes of utility, they might at least serve as an index to others, who, desiring to pursue the investigation would have their labours thus far abridged.

In reviewing what I have written I find that I have submitted for your inspection a specimen which under any aspect is of curious interest, whether we regard it as a blighted fœtus of one conception of twins, or whether it be considered one of those embryos whose uterine existence depended upon the yet unsettled hypothesis of superfœtation. It is equally worthy of reflection, viewed merely with reference to that singular and unaccountable property of the uterus, by which it is enabled to retain within its cavity for an indefinite period, a decidedly foreign substance, unnecessary to it as an organ, and destined to act no part in the great works of nature. Moreover, this foreign dead matter remains undecomposed, free from putridity, the fate of all other dead matter, animal or vegetable, especially when subjected to two such agents as heat and moisture.

How is this? Upon what depends this antiseptic property in most of the cases so far recorded? Why is it, to use the language of a distinguished author, that "*whatever may be the condition of the dead fœtus, the tenantry of the living one, even up to its maturity, may in no respect be affected?*" It cannot be wholly or scarcely at all ascribed to the preservative qualities of the amniotic fluid, because *firstly*, the component parts of this fluid are not qualified for this end, consisting, according to recognized analysis, of the following elements, "a peculiar *acid* called amniotic, with a *little* muriate of soda and *ammonia*, and a *trace* of the phosphate of lime, and is said to be *very little more than water having a little gluten in it,* sometimes serous and pellucid, *at others turbid and offensive.* We are further informed, that while in the earlier months, it is nearly if not quite transparent; *as pregnancy advances it becomes turbid, containing more or less of what appears to be mucus:*—Secondly, we know that in the advanced stages of gestation, when the fœtus dies from any cause, and is retained but a very limited time after death, we find on its expulsion the incipient signs of decomposition, and frequently entire decay and desquamation, which signs are adopted to guide medical jurists in their investigation of criminal cases. Why, we ask, should this unavailing mimic miniature of man escape the influences of destruction, when older embryos, capable of maturity, with increased resources of vitality, undergo the almost universal doom of dead matter?

Another curious point of inquiry is created, as far as it may affect the right of property, vesting upon proofs of legitimacy—and this warrants the question,—*Does or can Superfœtation occur?*—We are constrained to admit, in the premises, that the array of objections to the doctrine are specious, and are urged by some of the ablest physiologists. But it is equally evident that in the midst of their doubts and investigations, facts have stared them in the face of so obstinate and irresistible a nature as to qualify in a very material degree these objections. The admissions to which, from time to time they are driven, are based upon certain contingencies, and I think that the authorities and facts which I have already presented, afford these contingencies beyond dispute. The opponents to the doctrine further feel the difficulty of persisting, as is frequently to be seen when consulting the cases quoted even by themselves, from which, i is evident, they cannot fly, and, in short, I am clearly of opinion, after mature review of everything they have written against it, that they rathe uphold than invalidate the theory. It does not, nor must it satisfy th inquirer after truth, to have the alternative crowded upon his acceptance i the form of a compromise. In science, no such thing is admissible. *It i either superfœtation, or it is not.* We do not receive the substitute of terms such as "superfecundation," "cotemporaneous conception," "secondar ovum," and the like, because, surely, if connection by coition throug means of one man impregnate, it is *one fœtation;* and if another man perform the same act upon the same woman (within prescribed period assigne to gestation), with equal success, it is *super*-fœtation, that is, a second fœtation superimposed upon the first;—so that, with all the distortion of whic language is capable, it cannot be construed otherwise, for as I have befor said, the cases I have presented substantiate the fact, else, literally, (as i some of my examples,) *black and white* have at last ceased to be proo Hence there is no good reason for denying to the influence of copulatio by one man, that which examples concede to claim of the same act b different men, and even of different colours. Besides, it is common for th husband to cohabit very regularly during the early months of pregnanc for in the report which I have given of *Dr. Defermon's* case, this fact is specially stated in evidence, and as the *occlusion of the uterus* and the formation of the *membrana decidua* are amongst the prominent arguments against the possibility of superfœtation, there is a propriety in pushing our inquiries somewhat further, and ascertaining, if possible, at what precise time these *quarantines* of the uterine dominions commence, and at what time their ports are irrevocably closed against foreign entries. It is admitted upon authority not to be slighted, that although the deciduous membrane does exist at the time specified, and notwithstanding the cavities for some wise purpose are in a manner closed, yet neither this membrane lining the uterus, nor the mucus which effects the closure, *although in contact* with the orifices and cells of that organ, adhere so firmly as to prevent the ingress of the semen or even of the "aura seminalis," provided this last be admitted to exist. Nor do they prevent the frequency of hemorrhages during gestation,—nor is the menstrual discharge, to which some women are subject while pregnant, obstructed. But, say the opponents, when the uterus is impregnated, the Fallopian tubes, instead of "running horizontally," to the organ, "lie parallel to its sides," thus preventing them from embracing a new embryo from the ovaria. This might be reasonable, if it applied to a fully developed uterus, but not in early pregnancy, when superfœtation is supposed most commonly to occur. The weakest and last objection urged is, that if superfœtation were true, the new embryo would prove destructive to the first. This objection is weak and generally set down as the most gratuitous of all of their assumptions. Let us return, however, to the closure of the uterine orifices by the causes already named,—and we are prepared to meet this objection by falling back upon old *Mauriceau*, (*Op. Citat.*, p. 44.) He says, "when a woman is animated with an *earnest desire* for copulation, in the heat of the action, she sometimes dischargeth by the passage that terminates in the bottom of the womb, which *being dilated and opened* by the impetuous endeavours of the seed, *agitated and overwhelmed* more than ordinarily, and this orifice *being at the same time a little opened*, if the man's seed is darted into it *at the same moment*, it is thought a woman may then again conceive, *which is called superfœtation.*" "Therefore," he adds, "I am not willing to say that there never is any superfœtation, but that it happens very rarely."

An admission to this extent from *Mauriceau* is of force, as it is extracted from him during researches which might rather be said to be adverse to the doctrine than otherwise. And if its occurrence is granted as being possible in one instance—it fixes the fact. Its frequency is irrelevant. Nor should the period at which he wrote be objected as "*antiquated*," since I am clearly of the opinion, that on this subject and its embarrassments, the light since shed has been greatly disproportioned to the advantages enjoyed by later inquirers, and perhaps in no age have medical men, aspiring to eminence, involved themselves in grosser absurdities, nor entrenched themselves behind more inconsequential arguments, than have some of our own times.

Again,—all who canvass the broad question of generation, speak of an "*orgasm*" as essential to certain results. Now this is a term and nothing more. Men are in the habit of using different names for the same things, and upon a rigid comparison, I unquestionably prefer the unsophisticated energy of the ancient writers to the hyperclassical and affected confusion of the latter day neologists. For example, on this very subject, where *Mauriceau* speaks of "an earnest desire for copulation," he at another place (p. 22) says, "now to the end, these different sexes should be obliged to come to this touch which we call copulation: besides *the desire of begetting their like, which naturally inclines them to it*, the parts of men and women destined to generation, are *endued with a delightful and mutual itch, to stir them up to the action*, without which it would be impossible for a man, (so divine an animal,) born for the contemplation of heavenly things, to join himself to a woman, in regard to the uncleanness of the parts, *and of the act*."

Now these various expressions, no less graphic than true, certainly harmonize with all after opinions, and sustain the litigated points yet at issue in questions of rape, as to whether a woman can be impregnated unconsciously during sleep; or whether she can conceive from forcible copulation, when her weakness "not her will consents," and many others equally doubtful to the minds of jurists, medical and legal. Why then deny to the uterus the competency of repeating the procreative power under the *orgasm* excited by *two different men* upon the impressionable ova, provided two pre-requisites obtain?

1st. That the act be performed within the time prescribed by the advocates of superfœtation, as well as by its opponents, (who have been forced, at times, to yield certain grounds,) viz., *within thirty days after the first conception*. 2d. That the proposition be true with regard to the anatomical and physiological *condition of the parts in the early months of gestation*. If then the os uteri be capable at this period of affording an exit (as has already been shown) to the catamenia, hemorrhages, and even the expulsion of the ovum, it argues that these supposititious barriers are not so formidable as might be imagined. We are justified in a contrary inference from all observation. Indeed, a still stronger point can be established; because this *membrana decidua*, the very gate of the inner temple, to some physiologists, *might as reasonably be urged against the introduction of any ovum at all*, whether of the first or subsequent copulation, since, according to *Hunter*, the uterus is lined with "*a soft, humid, paste-like secretion*, furnished by the secreting vessels of its lining membrane," (constituting his deciduous membrane,) "from the earliest trace of impregnation which is to be observed in the cavity of the uterus,—AND EVEN BEFORE THE OVUM HAS REACHED IT." If then it can keep out the last ovum to suit our opponents—why it certainly, if Hunter be correct, can reject the first. This adventitious membrane, which, according to my belief, is doubtless destined for *ultimate*, and not for immediate service, upon all good authority "appears to be nothing else than an effusion of coagulable lymph," having, as Hunter says, "scarcely a more firm consistence than curd of milk or coagulum of blood," and in the opinion of *Rigby*, (p. 48,) "although much thicker than the other membranes it is much weaker." *Rigby* also says, "inferiorly *near the os uteri* it becomes thinner." Again,—"it is much more loosely connected with the uterus *during the first months* of pregnancy," "*and this is one reason why premature expulsion of the ovum is more liable to take place at this period* than later. (*Loco. cit.*) With all these facts it is no very fanciful conjecture to suppose that the same state of the parts, which is capable of permitting substances, from a slimy secretion, to an entire ovum, to escape, *may allow others to enter.* Nor is it unlikely that a frail and soluble substance no firmer than a "coagulum of blood, or the curd of milk," should give way to the violence and heat of orgasm, or to the vehemence and force of an ardent copulation, when both parties are maddened to that state of unconscious and ungovernable passion, to which has been eloquently ascribed the genius of the Athenian orator, who was said to have been "*conceived in rapture, and in fire begot.*"

My views seem more directly confirmed by another fact, which is, the frequent occurrence of *early abortions*, ay, and later miscarriages, in consequence of undue and violent venereal indulgences.

You may recollect that I had occasion to refer to Dr. Defermon's case, in order to show that this supposed occlusion might be disturbed by regular cohabiting during the early months. Permit me to call your attention now, to another feature in that case, then omitted. The reporter states that "*six weeks* after conception she underwent fatigue, *after which, spots of blood were seen on her linen.*" May not those spots have been the result of laceration, or a breach of continuity of this very slender, incipient curtain, no stronger than coagulum, occasioned by a violence of venereal pleasure, within the term prescribed on all sides, for the possibility of a second conception? The thing is not even improbable.

The possibility of superfœtation is also admitted by distinguished physiologists, *provided* the intervals between the respective copulations be short, (as for instance in the "American case,") and they further concede, that where the two children are born *at an interval of some months, they are not twins*, although existing some time together in the mother's womb: (vide *Richerand Phys.*) And in these opinions they are sustained by recorded examples, but more especially, if you recollect, those reported by *Beck*, where the intervals extended *from one to four months* between the births of mature children. This evidence disarms even *Guy* of his doubts concerning superfœtation, because he admits that "a long interval, say of four months," favours the doctrine: (p. 113.)

There are other though less weighty objections to our theory, among which is the presumption that there cannot be a case of superfœtation, where there is "one placenta for both children;" and *Mauriceau* goes so far as to declare all such to be cases of "twins of one conception," inasmuch as he believes that out of every one hundred women who have twins, "ninety have but one burden common to both." In this opinion he is at direct issue with *Hugh Chamberlen*, the translator and editor of his book, who in his comment upon this assertion says, "The author is out of his computation, for there are *near as many with two as with one burden.*" Besides, you may call to mind the case I cited from the *Med. Times*, where two children were born, one on the 1st. Oct., the other on the 2d. Nov. following, *each having its distinct placenta*, and as the record of similar cases is by no means rare, it is useless to cite them, for these exceptions, condemning them out of their own mouths, would become too numerous, to promise them the shadow of a general rule. Another weak, though plausible objection is, that "conception may take place in the same ovary, or in different ovaries, from the nearly simultaneous application of semen, *whether of the same man* or of different men:" (*Guy*, 110.) This is a gratuity in speculation not admissible, for, when an unknown cause is attempted to be set up in opposition to a known effect, for which a strong presumptive cause can be assigned, and when both are equally incapable of demonstration absolute, the assent of our reason is justly due to the most rational. Now in my review of the definition and the possibility of superfœtation, I urged that a *second impregnation, superimposed upon a first*, came distinctly within this category, and I care not what the interval of the respective copulations may be, because I maintain that *conception and impregnation is an instantaneous act.* I believe that whenever a consentaneous condition of two individuals exists (cæteris paribus) so as to produce the ecstacy capable of arousing the response of the ovarian orgasm to the impulse imparted by the male semen, *that impulse is electrical, immediate and irresistible.* I believe that the venereal torch is applied to materials combustible and already prepared for their destiny, and that the vivifying power has not to wander about for its election, and incubate the ovum as a hen does its egg, but, that the ripened and expectant germ attracts by its specific, although mysterious affinity, the messenger sent to usher another being upon the stage of human life. What the result may be, remains for future development; it may perchance eventuate in hydatids, in mole, or any other lusus, according to the functional integrity of the respective machinery afterwards called upon to complete the work so beautifully begun.*

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* *Nisbet* says, "The *retrograde* action of the Fallopian tubes is assisted by a collapse *succeeding the excitation which coition has produced.*"

Richerand, arguing for the experiments of Haller, says, "In a ewe opened a *fœ*

Well then, if I am correct, I am authorized to regard the impregnating act of each man as an act of *fœtation*, and the second, fixed upon the first, as *super*-fœtation, independent of the time. Besides which, the possibility of even a longer duration of time between the acts is not necessarily excluded, for reasons which I have already advanced when I examined the anatomical and *post-coitu* condition of the uterus. Again: the "simultaneous application of semen *by one man*," to different ovaries, I cannot deny, else I would deny the existence of twins; but I do emphatic-

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minutes after coition, you may see a vesicle larger than the others, torn, with a little wound *of which the lips are still bloody*." (*Physiology*, p. 477.)

Broussais, (*Physiology*, p. 534,) "The stimulation of the vagina produced by coitus being, as we have said, communicated to *the whole uterine apparatus*, the Fallopian tubes are thrown into a state of erection, by which, of themselves, their fimbriæ *are applied to and embrace the ovaries*. This is an indispensable preliminary for conception to take place, after which it is necessary that the semen thrown into the vaginal cavity *should pass the neck of the uterus, penetrate into the Fallopian tubes*, and traverse them so as to reach the ovaries. One of the last mentioned organs is adequate to bring about conception. Stimulated by the semen, it reddens and swells at the most yielding point—its *investing membrane is ruptured and gives issue* to a drop of gelatino-albuminous fluid, *which* the Fallopian tube, the fimbriæ of which are still applied to the ovary, *takes up, absorbs and conducts*, by a kind of peristaltic movement, into the cavity of the uterus."

At p. 537, oper. cit. he adds, "Is conception effected at the moment of coition? I do not believe there can be any doubt on this subject."

But *Broussais* is still more explicit in declaring his belief, when commenting upon a case which he cites from *Prof. Lallemand*, (oper. cit. p. 551.)

It is the case of a woman who, while in *coitu*, was surprised and alarmed by the opening of her chamber door. After a painful and abnormal pregnancy she died, and the post-mortem examination developed an *extra-uterine fœtation*. The reflections occurring to the mind of *Broussais* from the history of the case, induce him among other corollaries, to put this question. "*Did the ovum fall at the instant in the cavity of the pelvis*, or, only a few days later?" And he answers himself thus,—"The *first* case would suppose that the *prolific drop* (*i. e.* the fluid of the ovum) is absorbed by the tube and *carried to the uterus at the very instant of conception*." After arguing the converse, he adds, "We know that observers admit that the ovary fecundated by the spermatic fluid, requires a certain number of days to project its ovum, and that it is in order to wait for it, that the fimbriated extremity of the tube, kept in a state of erection by the irritated ovary, remains in apposition with it. *But were this really the case, I am surprised that extra-uterine pregnancies should so rarely occur*, for during the number of days supposed requisite for the detachment of the ovum, women are often exposed to moral emotions as vivid as that of which I have just spoken, *and not less capable of destroying the vital erection of the tube*, which maintains its fimbriated extremity in apposition with the ovary." "*For if the detachment of the ovum requires so long a period*, women can hardly be taken too much care of, during the days immediately succeeding conception."

In conclusion, I will add to these inquiries of Broussais another, suggesting itself to my mind, and it is this: Why does not the violent exercise of dancing in which newly married women indulge so immediately at the time when conception occurs, more frequently produce the same extra-uterine accidents?

ally deny that the simultaneous application of semen by *different men* to the same ovaries constitutes a case of twins, and no reasoning can sanction it. Each man is capable of imparting his own peculiar impression, and *then only* can its effects be received, cæteris paribus. If he fails, the next man may impart his, and thus in proportion to the single or several success will one or more impregnations be effected, separate and distinct, as such, and each child so begotten has not only its separate father but its separate impregnation. Still more decided is this postulate where the children partake of the distinctive races of their sires, as in cases of *white and mulatto*, or *mulatto and black.* The truth is so palpable that it might even be said to destroy the proverb, "He is a wise child that knows its own father," which would be probable where twins are begotten by one man at one time, but in superfœtation cases, (such as in South Carolina,) where a white man claims one and a black man the other, the child must be a born idiot to mistake its ancestry. To meet such objections fairly, therefore, it would be necessary to canvass them too extensively for time or utility, for we can readily perceive that it embraces the entire scope of the still mooted, unsettled question as to the means by which the semen reaches the ovaria in order to vitalize the sleeping germ of the future man. How are we to reconcile the various opinions seemingly based upon the conscientious convictions of the most elaborate inquiries? The "nearly simultaneous" application of the semen from the same man or from different men must unavoidably be made to depend upon its *mode of entrance.** Upon this point, the schools

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* This doubtless is a vexed question, and responsible authorities are arrayed against each other, but I am not satisfied with the objections urged by *Dr. Chapman* in the copious note to his edition of *Richerand*, (1821, pp. 471–474,) for, if he be correct in the premises, it may with great propriety be asked, *to what use is the semen destined?* In organs so manifestly important, and so indispensable to the perpetuation of our race, it cannot for an instant be supposed, that the nice and perfect elaboration of this fluid, and its retention until just at that critical moment, when the Almighty first pleases to consummate his most wonderful work, should have been a gratuitous dispensation, because, in all other of our excretions, periodical discharges are established and their undue retention is attended with pathological results. But the influences of castration would alone resolve this doubt. Destroy the laboratory whence the semen proceeds, and will impregnation be practicable?

Apart then from the assertions made by Haller, Morgagni, Richerand and others, (and the compulsory acknowledgment that once occurring it must be supposed again possible,) *Dr. Chapman's* objections are evidently feeble. He denies the entrance of the semen in utero, because—1st. "The vagina grasps the penis and prevents the projectile force." Now we know that this cannot obtain in all cases, owing to the numerous instances where the vagina is immensely disproportioned to the penis, and no such strangling grasp occurs, and the professor himself admits that "the male organ is endowed with a considerable projectile force."

2d. He objects, because the "spissitude of the semen" prevents its projection the requisite distance. This is readily answered, I think, by a knowledge of the distance to which onanists are capable of projecting it. Again, *Broussais* expressly says that are divided mainly between the *Ovarists* and the *Epigenesists.* Their arguments spread far and wide, and their conclusions result in uncertainty. *Richerand* and his co-thinkers are of the opinion that although the penis does not enter the uterus, *the semen does*, and it is done, he thinks, at the moment of copulation, when the uterus "from irritation draws together and inhales by *real suction* the semen *which it craves:*" (*Phys.*, p. 47.) You are all acquainted with the multiplied experiments of *Spallanzani*, who asserts that he discovered semen in the uterus upon opening animals immediately after copulation, and *Dr. Good*, than whom there never has been a more indefatigable collector of medical history, after a learned review of all the contending theories, establishes for himself seven positions—the first of which applies directly to the point now in discussion. He says that the experiments from the time of Harvey to the period at which he himself wrote, and "particularly during the last half century, have sufficiently established," that "In all ordinary cases the *male semen enters the uterus at the time of coition.*" (*Study of Med.*, v. ii. p. 422.)

I am, moreover, disposed to believe that the semen enters the uterus, through the os uteri, for other reasons. It is admitted upon very competent authority (and I particularly desire your attention to this fact), that *whether the ovum leaves its bed or not*, still, *the membrana decidua is formed*, (*Dewees, Syst. Mid.*, p. 64,) and it is distinctly asserted that *the impregnation of the ovaries is all that is required* for the production of this membrane. Two corollaries are deducible from this physiological admission. 1st. The same act which injects the uterus with semen, produces that condition of its tissues preparatory to the formation of the deciduous membrane, and at the same time places the ovaries in that responsive condition essential to conception. The formation of this membrane being, then, the keystone of all objections against the doctrine of superfœtation, how do those who urge them overcome the difficulty interposed to prevent the entrance of *any ovum*, whether for a single or a twin conception? Especially since physiology can affix no accurate time at which the ovum is disengaged from the ovarium, nor the length of time requisite for it, when so disengaged, to reach the portals of the uterus or gain admission within its walls? And, I again desire it to be remembered that this is not

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"coition produces in women contractions of the vagina, *which is thereby shortened and approximated to its axis.*" (*Physiology*, ed. 1829, p. 534.)

3d. He opposes to the entrance of the semen, the "rugæ of the vagina," which he thinks are "designed as so many barriers, to arrest the progress of the semen," and to this let me add his other objection, viz., the unfavourable position of the os tincæ for such a purpose.

These are ultra-hypothetical, because it can readily be conjectured (and this is all we are permitted to do at *this stage of the inquiry*), that the same anatomical law by which other surfaces are permitted to change their relations for the accomplishment of great functional duties, is as operative here, so that the rugæ may be effaced *pro tempore*, and the os tincæ thrown into a corresponding aptitude.

an argument hinged upon the contingency of an *extra-uterine, Fallopian,* or any such abnormal form of embryology, but upon the fact (if Dewees and others be right,) that the membrane is formed "*whether the ovum leaves its bed or not.*" Hypothetical periods, it is true, have been assumed, for the time at which the ovum, after coition, commences its journey to the uterine cavity,—and upon comparing the amount of testimony, the nearest approach to that time is an average of twenty days. 2dly. I am justified in my opinion of the instantaneous act of conception, because, if the ovum does not reach its destined resting place, nor "even leave its bed," previously to the range of average, why then, the membrana decidua, and the mucus, occluding every avenue, being immediately formed without reference to those contingencies, the after chances for peopling the world would be small indeed.

From all I have said, therefore, and with the authorities which I have brought to bear upon my opinions, I feel I can safely assume the doctrine of superfœtation at any period within a reasonable time, not directly contravened by so long an interval between the periods of copulation as to preclude the chances of the semen being received. Having given my objections against the interference of the membrane and the mucus, I will merely add that this membrane is said to have "no perceptible blood-vessels at that part which is situated near the cervix uteri,—this *portion being much more loosely connected with the uterus.*" Again,—"there is at an early period of pregnancy an angle formed between the decidua reflexa and the decidua vera, and here it, (*the latter,*) is often *extremely thin and perforated with small holes like a piece of lace.*" (Rigby, p. 48.)

It is, therefore, begging the question for our opponents to ask this "nearly simultaneous application of semen, &c.," in the face of their own oft reiterated obstacles to such an event, namely, the occlusion, &c., immediately subsequent to conception.

In conclusion, I will say that I have done no more than sport, as others have done, over a wide field of conjecture,—and after all, when we shall have exhausted ourselves and others, what has been accomplished? Literally nothing,—"*causà latet, vis est notissima.*"

The *fourth* and last question connected with the specimen you have seen is this:—*What would have been the chances for spontaneous amputation had this fœtus progressed to maturity with the present condition of the umbilical cord?*

It is an interesting inquiry, and by no means irrational, if we are to be guided by the many instances in which this intra-uterine operation has been performed with and without the abnormal distribution of the cord as we see here presented. This lesion had occasionally been noticed by authors, among whom were *Richerand,* (*Elem. de Phys.*, p. 477,) *Desormeaux,* (*Dict. de Med.*, vol. xv. p. 404,) *Billard,* (*Mal. des Enfans,* p 623,) *Murat,* (*Dict. des Sci. Med.*, vol. xvi. p. 70.) But it received no formal or statistical attention until 1832, when *Dr. Montgomery* published his views on the subject in the *Dub. Med. Journ. Med. Sci.*, vol. i. p. 140, and this having attracted the attention of medical men both in Europe and this country, he was induced to embody the cases which he had seen, with those subsequently coming under his knowledge, in a regular essay now appended to his valuable work on "Pregnancy," and to which I shall be chiefly indebted for many of the citations I will presently adduce.

The agency of the umbilical cord in the production of this phenomenon, is not conceded by all who have either seen, or written concerning it. *Haller* was of opinion, that the malformation always resulted from imperfect development, and not from the removal of a part already formed, and perhaps he was induced to this mode of thinking, from the fact, that there have occurred cases, for which no assignable causes existed. But the propriety of his suggestion is questionable, for the reason, that in many instances, the amputated part has been thrown off some time prior to the birth of the child, exhibiting the limb thus mutilated, and where *the stump was not entirely healed*, either on the foot or the extremity from which it had been separated. On some occasions the bone was not quite covered.

And in objection to the idea that it proceeds from death of the part, I would add, there is no evidence of decomposition which would support such a belief.

I have said that there were cases presenting the deformity, for which no *mechanical cause* could be assigned. I select a few.

1*st. Mr. Watkins* (*Lond. Med. and Phys. Journ.*, vol. 54) relates a case where the *left foot* was removed above the ankle. It was nearly, but *not quite healed.* No marks of putrefaction. The amputated portion and stump appeared in perfect preservation. Mr. W. offers no opinion as to its nature or cause.

2*d. M. Chaussier* (*Discours prononcé à l'Hôpital de la Maternité*, 1812) mentions two cases occurring to the fore-arm, and another where the disconnected portions of the hand and arm were lying apart. *The stump was healed.* He attributes it to gangrene, but for reasons to which I have adverted, this would seem to be merely hypothetical, as there is nothing to justify the belief.

3*d. Dr. Tyson West*, of Alford, Lincolnshire, (*Lond. Med. and Phys. Journ.*, 1832, v. i. p 741,) communicated to Dr. Montgomery a case occurring at the Westminster Lying-in Hospital. He accounts for the loss of the amputated portion, by the great consternation produced at the time, but he decidedly thinks that "*the division of the limb was effected by some stricture around it.*" "The stump," he adds, "was partially healed and nicely rounded, an inch and a half below the knee."

4*th.* Viel (*Frorieps Notizen*, bd. xii. p. 26; quoted by Montgomery, *Oper. cit.*, p. 219) relates a case where the left foot was separated from the bone, during the fœtal state, and the fore foot was born by itself quite healed.

5*th. Béclard*, (*Bulletin de la Faculté*, &c., 1817, vol. v. p. 213,) another case of *deep depression penetrating to the bone*, without any ostensible cause. He is of opinion that if the fœtus had remained in utero (it was an abortion) until maturity, "it would have been born with an amputated and cicatrized leg, the remains of which might have been found in the liquor amnii."

6*th. Dr. Fitch* (*Amer. Journ. of Med. Sci.*, No. xxxv., May, 1836, p. 90) relates a very interesting case which I shall abridge. A woman in seventh month of gestation, had on 17*th March* a sudden discharge of liquor amnii. On the 21st, a *fœtal foot* perfectly formed was thrown off, separated apparently at the ankle-joint. It was in perfect preservation.

On 5*th April*, she was delivered of a seven months fœtus. The cicatrix was not complete at the time of birth, but the superior portion of the limb down to the knee corresponded in every respect to its fellow.

Remarks.—Dr. Fitch takes occasion in this case, to notice particularly that property in the uterus to which, you recollect, I adverted, as so remarkable in protecting against putrefaction, animal substances accidentally separated from the maternal circulation. Such, for instance, as the blighted fœtus, which forms the subject of this essay. He likewise refers to the decomposition of a small portion that remained a few days after delivery, subjected to the "warmth of the body and *other influences*," which accords with the contrast I instituted between the fœtal preservation and the decomposition ensuing upon retained portions of post partu placentæ.

Another character of cases occurs, where the lesion does not depend upon the umbilical cord, but upon "*a preternatural growth of ligamentous cords and bands, and their attachment round and about the fœtal limb with such force as to produce the same results.*"

Montgomery (*Oper. cit.*) gives the case of a fœtus, aborted at fifth month. There were *complete ligaments* surrounding the limbs, consisting of distinct threads passing down from both hands to the legs,—at one end forming a complete ligature around the middle of each hand, preserving a distinct depression where it passed; the *part of the hand below it almos completely undeveloped.* It descended thence towards the legs, which i crossed and surrounded, just above the ankles, so tightly, that *fully two thirds of their thickness was divided.* No discoloration nor the slightes appearance of disease.

N. B. Four years subsequently, Dr. M. was shown by *Dr. Labat* another case similar to his own.

Tragorsky describes another case. (*Mem. Imp. Acad. Sci.*, St. Peters burgh, 1834. 6th series, vol. iii. pp. 3–7.)

Dr. W. C. Roberts, of New York, in a very interesting monograp upon "*Diseases of the Fœtus*," (*Amer. Journ. Med. Sci.*, Aug., 1840, 383.) refers to a case such as the one just cited, reported by *Dr. Newnham* (*Med. Repos.* vol. iii.,) where a fœtus had those preternatural ligament tightly coiled around the *left leg*, which was enormously swelled, creatin a deep sulcus.

As to the production of these ligatures, various speculations have bee promulged. *Gurlt*, Prof. Roy. School at Berlin, rejects the notion gangrene, and thinks they depend upon the history of the formation the fœtus, being *prolongations of the egg membrane from which the fœtu grows*, whether this skin (or membrane) be taken as the navel, bladder the amnion; but "denies to them the character of organized lymph. (Montgomery, *Op. cit.*, p. 217.) He also thinks that they are, afterward by the constant motions of the fœtus, twisted into slight, but firm cords threads, which may involve different portions of the fœtal limbs, so as "stricture them and cause their separation," producing thereby wh has been called spontaneous amputation. From this view of the professo

Dr. Montgomery dissents, because he believes that whenever this ligamentous cohesion exists between the amnion and the fœtus; "it produces a monstrosity of a peculiar kind, such," he says, "as was observable in the different specimens from which Professor Gurlt deduced his conclusions, where one end of the band was invariably attached to the amnion, while the other was connected with the fœtus." Whereas, in those cases coming under his own notice, "both ends of the ligature were attached to the fœtal limbs."

Neither of these solutions appears to my mind sufficiently satisfactory, nor do they shed much light upon the matter. In fact, Montgomery himself confesses his inability, after five years deliberation, "to solve the problem of the origin of these ligatures, and still more of their application."

Dr. Simpson, of Edinburgh, (*Dub. Med. Journ.*, Nov., 1836, vol. x. p. 220,) sustains Montgomery in his views, and like him, regards the agent in these spontaneous amputations to be an "*organized lymph*," the result of an inflammatory action, occurring in the fœtal state, which not only produces the special deformity now under consideration, but also other monstrosities, diversified as we know them to be, and recorded in that most interesting and industrious work of Geoffroy de St. Hilaire, *Monstruosités Humaines.* We also know that the fœtus is subject to a variety of *diseases* while a tenant of its temporary prison, and the authorities are laboriously collated in the excellent monograph by *Dr. Roberts* to which I have already alluded.

Having seen that this *spontaneous amputation* does occur, both from auses unaccountable as well as from such influences as we have reason o believe were exercised upon the integrity of the tissues by those liganentous bands to which I have referred, the inquiry now remains:—*Can he umbilical cord, by its devious distribution, so arrest the circulation, and hus the vitality of a fœtal limb, as to separate during gestation from the ody?*

I am disposed to answer affirmatively. *First.* Because the mutilation as occurred, inexplicably as well as mechanically, and under such pecuar conditions as to preclude the idea of congenital deformity; and, *econdly,* Because, cases are recorded where the umbilical cord has been ound coiled around the limb, accompanied with such a depressed and inented state of the subjacent texture as to warrant the twofold conclusion, at cases where a separation had been effected, were doubtless due to this use; and where no separation had as yet been accomplished, to leave a ery rational inference of its liability, had the stricture been much longer ntinued. We are acquainted with the power exercised by ligatures upon olypi and other excrescences, which leaves little room to doubt a similar ffect upon the delicate, semi-osseous texture of the fœtal limb.

I shall close this essay by offering, in addition to the specimen upon your ble, the history of a few cases *where the cord was found entwining the mb of the fœtus in utero.*

In 1835, *Dr. Adams* sent a specimen to Dr. Montgomery in which the nbilical cord coiled around the left leg of a fœtus in its third month.

The limb was deeply indented, and shortly after this, a case occurred in the practice of Dr. Montgomery himself, (see his work *passim*,) where the cord was entwined around the left limb just above the knee. The fœtus was at its third month.

Morgagni (*Alexander's Translation*, Epist. 48, Art. 53, vol. ii. p. 758), records the case of a fœtus between the fifth and sixth months, in which there was a great deformity, especially the feet, but *the left leg was broken*, and he is unequivocally of opinion that it resulted from the binding of the cord around the child's leg.

Roberts (*Oper. citat.*, p. 383), refers to a case recorded in *Siebold's Journal*, vol. xvi. No. 2, of the umbilical cord being coiled around the right leg of a fœtus three months old, forming a knot. The development of the leg was prevented, and *worn down to the bone, the integuments remaining unaltered.*

Dr. Buchanan (*Amer. Journ. Med. Sci.*, Aug., 1839, p. 522), gives the case of a fœtus four months old. The umbilical cord was singularly twisted around the *neck and thigh*, by which both motion and circulation were impeded. At the point of compression, "nothing more than the integuments intervened betwixt the cord and the bone." Below, the limb was perfectly developed.

The latest case to which I have had access, is one reported by *Dr. Griscom*, of New York, (*New York Journ. Med.*, Jan., 1845.) The lady supposed herself in the eighth month of gestation. Sudden causes produced abortion, and she expelled an ovum containing a fœtus between three and four months old. The umbilical cord longer than usual, *wound aroun the leg nearly a dozen times*, "as closely as a thread upon a spool."

The authorities and examples which I have cited, are sufficient, I think to warrant the question which I have proposed to the society, as to wha would have been the result in the case of the preparation before them, ha not the fœtal growth been arrested by a premature death. From the arra of evidence I am bound to conclude that a separation of the limb woul have been produced, by that process which has so appropriately bee called a "*disjunctive atrophy*." And this supposition is by no mean groundless, if we only refer to *Siebold's* case, where the leg "was worn t the bone," and to the declaration of *Dr. Buchanan*, who says in referenc to his case, "had the child lived long enough, spontaneous amputatio would have been the result." This also was *Béclard's* opinion.

Art. III.—*Report of some Operations performed during a late cruise in Pacific.* By Ninian Pinkney, M. D., Surgeon, U. S. N., (Commur cated through Dr. Thomas Harris, Chief of the Bureau of Med. ar Surg., U. S. N.)

Case I. *Removal of a third of the head of the humerus.*—John Burden, the subject of this case, aged 17, was discharged from on boa the American whale ship Golconda, in the month of Nov. 1841, and se to the hospital at Lima under the charge of Dr. McLean. Ten mont from the date of his entrance into that institution, he came to Callao, order of the American consul, to consult me. The statement of the case as detailed by the boy was, that a severe injury had been inflicted upon the right shoulder-joint. Violent inflammation ensued which resulted in suppuration. Two fistulous sinuses were formed, one at the superior and anterior part of the shoulder, on a level with the coracoid process of the scapula; the other three inches lower down in a vertical direction. The discharge from these openings has continued from the date of injury to the present moment; general health impaired. The elbow-joint has undergone a degree of contraction, so as to render it impossible to carry the fore-arm beyond a semi-flexed position. Constitutional irritation and symptomatic fever threatened a fatal termination. A probe was introduced into the upper sinus, which entered the socket with facility and came in contact with the head of the humerus. To be certain that such was the fact, I rotated the arm, when the probe was made to move freely between the fingers without being displaced. In consultation with Dr. McLean I proposed the following operation, viz., to cut down upon the joint, examine the head of the bone, and to remove it, as also the glenoid cavity, if they should be found seriously involved in disease. The proposed operation was objected to, upon the ground that it would destroy the patient. All further action in the case was suspended. In the course of a month, the boy gradually becoming worse, was sent by Mr. Prevost, the American consul, to Callao, to be operated upon by me. Upon his arrival I instituted further examination and found that a great change for the worse had taken place. A large tumour had formed upon the posterior part of the arm, and his general health was materially impaired. With the assistance of Fleet Surgeon Suillom, of the French Frigate "La Reine Blanche," I commenced the operation on the morning of the 6th of January, fourteen months from the date of injury.

The boy was seated in a chair; the arm was carried backwards and inwards, and then pressed upwards so as to force the head of the humerus against the superior and anterior face of the capsular ligament. A longitudinal incision was made with a scalpel on a level with the acromion process of the scapula, and carried to below the inferior sinus. This incision was made in a line external to the openings, and distant half an inch. The deltoid muscle was then carefully dissected from its attachment to the capsule of the joint. The coraco-humeral ligament, tendon of coraco-brachialis muscle and inner head of biceps were divided. I did not find it necessary to divide the long head of the biceps. The joint being thus exposed, I introduced the fore-finger, and felt a portion of bone which had perforated the capsular ligament, lying external to the joint. Upon further examination, I ascertained that it was attached to the shaft of the humerus half an inch below the capsule. I made a slight enlargement of the opening which communicated with the joint, in order to ascertain the condition of the joint, and to remove the bone with as little injury as possible. With a pair of cutting pliers I removed it; it proved to be a third of the head of the humerus, which had been separated by fracture. It was united to the shaft by ligamentous substance. The remaining portion of head of humerus and glenoid cavity being free from disease, I concluded to leave them alone. The detached portion of bone was carious, caused by being constantly bathed in matter for so great a length of time. A small amount of blood was lost by the division of the anterior circumflex artery. Lips of wound were brought in contact and retained by adhesive strips and interrupted sutures. I now proceeded to remove the tumour from the posterior part of arm, which I was enabled to do without difficulty, a simple longitudinal incision was sufficient. The extent of disease was much greater than I had anticipated. A portion of it having reached within half an inch of the external border of brachial vessels, I brought the edges of this wound together and applied adhesive strips. A spica bandage was applied and the limb supported in a sling. The patient was put to bed and confined there during the state of febrile excitement, which continued three days. Diet during this period was restricted to rice-water. Cold water dressings were applied to keep down inflammatory action.

Jan. 9th. Removed sutures and dressed wound; the healing process by the first intention had taken place.

10th. Wounds look well; inflammation has subsided. Bowels confined; prescribed mild purgative; rigid diet to be pursued.

26th. Patient is enabled to carry arm across the chest and raise the hand to the head, which he could not do before the operation without creating the most excruciating pain. The wounds have all healed; the functions of the elbow-joint are completely restored, and general health much improved.

April 1st. He has now a fair use of the shoulder-joint, and his general health is completely restored.

Ten months from the date of operation, I met with Dr. Garnett of the U. S. N., an officer enthusiastically attached to his profession, and requested him to examine the case. I submit an extract from his letter.

Oct. 26th, 1843. "In accordance with your request I examined yesterday the patient upon whom you operated at Callao, and take great pleasure in adding 'my testimony to the entire success' with which the operation has been followed. The patient has now regained the almost entire use of every muscle connected with the joint, and executes with facility all the natural motions of the arm." Eighteen months from the date of the operation the patient returned, as I have been informed, in the sloop of war Cyanne, and such had been the improvement that he was enabled to do duty on her voyage from the Pacific.

Case II. *Disarticulation at the shoulder-joint.*—On the evening of th 22d of June, 1843, I was called to visit a man in the employment of the English Steam Company, at Callao. I was at Lima, but an express was dispatche to me, and at 8 P.M. I saw the patient. Medical assistance had been called but no determination resolved upon in the case. Upon examination I foun that a severe gunshot wound had been inflicted upon the right arm. Th bone was shattered, belly of biceps muscle seriously lacerated, tricep muscle torn entirely through, ulnar and muscular-spinal nerves divided The fracture of the humerus extended beyond the insertion of the pector lis major muscle into the os humeri; brachial artery, vein and median nerv apparently uninjured. The accident occurred some distance from Calla The man had been out upon a gunning expedition, and in passing throug bushes with the hand hold of the gun near the muzzle, the trigger wa caught by a branch and the load discharged. The whole charge entere the middle of the arm on the inner part of the biceps, external to th brachial vessels, but sufficiently close, as I supposed, to injure them by co tusion. Convinced that no effort to save the limb would prove effectual, determined upon immediate amputation. A large quantity of blood havin been lost, I commenced the operation by cutting down upon the subclavia with a view of passing a ligature around that vessel. The patient wa placed upon a table in a horizontal position, and the head turned to th opposite side. An incision three inches and upwards was made, commen ing at the external margin of the sterno-mastoid, half an inch above the clavicle and parallel with it. The platysma and fascia being then exposed, a director was passed beneath them and then successively divided. The cellular membrane filling up the triangular space in which the subclavian is lodged, was then torn through by a blunt probe. The external jugular vein was easily avoided. Upon cutting through this cellular membrane, the subclavian vein, distended, rose from beneath the clavicle. In a few moments this subsided. I then proceeded carefully to tear through the fascia which binds down the tendon of the omo-hyoid muscle, and the artery was felt as it rests against the first rib. With Dr. Gibson's instrument I found no difficulty in passing the ligature; the point being directed from before backwards and then turned from below upwards, I kept it close to the vessel to avoid injuring the pleura and nerves. Having secured the ligature and dressed the wound, I proceeded to disarticulate the limb. With a scalpel I made an incision, commencing on the inner side of the arm, at the edge of the deltoid muscle, at the place of insertion of the pectoralis major muscle into the os humeri. This was carried downwards until it reached within three-fourths of an inch of its insertion, and continued in a curvilinear direction to the outer side of the arm as far as the fold of integuments in the axilla. This incision extended through the skin and integuments; the deltoid was then detached and the flap raised. The biceps tendon was divided and the capsular ligament opened; the arm was now pressed backwards, and the head of the humerus dislodged from the socket. Desirious of losing as little blood as possible, I tied the arteries as they sprung. The knife was now placed in the axilla. and by a transverse cut, the limb was by one stroke separated from the body. The arteries being secured, wound well sponged, the edges were brought into contact, and adhesive strips, light dressings and bandage applied; an anodyne was given and the patient put to-bed.

23*d.* Visited the patient; found him doing well; had rested during the night. Diet, chicken broth. Bowels confined. Ordered ol. ricini ℥j.

24*th.* Medicine had the desired effect. Pulse slightly excited. Suspended chicken broth, and recommended arrow-root.

26*th.* Removed dressings. Union by first intention had commenced in the greater part of wound. Re-applied dressings; diet to be continued.

27*th.* Dressed wound. Healing process advancing favourably. A more liberal diet allowed.

29*th.* Patient had rested well; in fine spirits; no arterial excitement; renewed dressings. Bowels being costive, I prescribed Seidlitz powders.

July 1*st.* It became necessary for me to make a visit to Lima on pressing professional business. Before leaving Callao, I called to see the patient, and found him sitting up. The ligatures had come away; the wound had a healthy appearance, and the healing process had rapidly advanced. My esteemed and intelligent friend, Dr. Suillom, offered to take charge of the case during my absence.

On the 4th of July, twelve days after the operation, the doctor was called to see the patient, and found that bleeding from the wound had taken place. Having satisfied himself that it was not arterial, he applied pledgets of cotton-wool soaked in a strong styptic solution. The bleeding not being arrested by this application, the wound was freely touched with lunar caustic, and a firm pressure maintained. Occasional doses of the solution of sulph. magn. with sulphuric acid were administered. The bleeding was temporarily checked by this treatment. An express was sent for me, and upon my arrival I found the patient in the following condition:—Bleeding had commenced; surface pale; lips blanched; pulse much exhausted; the blood oozed from the wound at its inner border. Parts tumefied and inflamed. I resolved at once, if possible, to discover the cause; to effect which I enlarged the unhealed portion of the wound. My efforts were fruitless. The ligature upon the subclavian was firm. I applied dry sponge, firm compress and bandage; prescribed doses of carb. ferri with nitric acid. On the morning of the 5th, thirteen days from the date of operation, the patient died.

After his death, I was told that the attendant who had charge of him, having left him for a few hours, a friend of the patient's gave him some brandy, which he drank freely of. This created febrile excitement, and before morning the bleeding had commenced.

On post-mortem examination I found the subclavian was thoroughly protected against secondary hemorrhage, by the formation of a firm coagulum united to its inner tunic. The other vessels requiring ligatures were equally well protected. No cause which could account for the bleeding was developed during this examination. It is possible that a hemorrhagic diathesis of an hereditary nature may have existed, though of this I have no evidence.

Case III. *Hydrocele of the Tunica Vaginalis and Spermatic Cord.*—Ignacio de los Carreros, of Buenos Ayres, consulted me in reference to two large swellings which had formed; one in the scrotum, the other at the abdominal ring. He consulted Dr. Douglass, a surgeon of respectable professional ability, under whose charge he continued several months. The doctor proposed tapping the swellings, and, at the same time, the removal of the testicle, which, being hard and enlarged, was considered as being in a scirrhous condition. The patient not feeling disposed to submit to so severe an alternative, was desirous of consulting another surgeon, before decided action should be had in the case. I was called in, and upon examination, discovered two large tumours situated as above stated. The one at the abdominal ring did not dilate upon the patient being made t cough; thus showing it not to be hernia, which it strongly simulated. I placed the fore-finger of left hand above the tumour, and with the righ hand I made firm pressure upon the swelling in the scrotum; an increas of the tumour at the ring immediately took place, thus showing that direct communication existed. Two diagnostic marks were absent, viz. fluctuation and transparency. I proposed incision of the tumour at th abdominal ring, and the introduction of a tent; I opposed the removal o the testis, because I regarded it as nothing more than induration, whic the excitement of the operation would tend to remove. The patient consented, and I commenced the operation by making an incision over th tumour at the ring, cutting cautiously until the sac was exposed; the superior branch of the external pudic was divided, which required a ligature A small opening was made in the sac, and then it was freely divided upon director. The accumulation was considerable, amounting to more than ha a pint. I introduced the fore-finger into the sac, and felt the testis; th enlargement and induration were less than I supposed. A tent was introduced and kept in for two days. Ten months from the operation there ha been no return of the disease.

I have had occasion to operate for hydrocele of the tunica vaginalis fou times; the first case was operated upon by injection. The disease r turned in less than three months. The remaining three were operated upon by incision and the introduction of a tent; in every case the operation was attended with success. The mode of operating was as follows:—I grasped the tumour, taking care to exclude the testis, and with a scalpel made a free incision through the integuments of the scrotum and dartos muscle. This exposed to view the tunica vaginalis, considerably thickened, which was opened by a bistoury, cutting from within out. Before all the water escaped, I introduced the handle of the scalpel and upon it passed the tent. This was kept in two or three days: considerable inflammation, accompanied by swelling of the testis, ensued. This state of things is requisite; the testis must enlarge sufficiently, so as to bring in contact the sides of the tunica vaginalis, or adhesion of its surfaces will not take place. In the introduction of the tent, care must be taken not to fold the edges of the tunica vaginalis upon itself. Such an accident may occur, and, if so, the operation would not be attended with success.

When inflammatory symptoms of an aggravated character set in, I adopted the antiphlogistic treatment. The patient unsuccessfully operated upon by injection, was cured by this mode.

Case IV. *Excision of a portion of the lower jaw.*—Louis Roca, of Lima, called upon me to examine his lower jaw, the right side being affected. He informed me that three years previous, a large gum-boil had formed, external to the first molar tooth, which suppurated. It was opened with a lancet; violent inflammation of the alveolar processes and gums ensued. The discharge of matter continued to increase in quantity; the patient became alarmed and sent for Dr. Reynoso. The treatment recommended having no effect, Dr. Scrivenor was consulted; he used the knife twice upon the diseased parts, but the malady grew worse. Dr. Douglas was then called in; he advised the application of aqua fortis; the patient remained under his treatment for six months. Some time previous to my being consulted, the patient had abandoned all treatment. I introduced two fingers into the mouth and made an examination of the tumour; it was an osseous growth resembling that peculiar exostosis which is often met with in the fangs of teeth. The mouth could not be closed without a lateral movement of the lower jaw. The submaxillary gland was apparently enlarged, and at first sight I was apprehensive that it was attacked with specific disease. Further examination induced me to abandon this opinion, and to regard the gland as merely displaced. The portion of the jaw over the gland was considerably curved, sufficiently so to cause this displacement.

On the 21st of June, 1843, I commenced the operation; the patient was placed in the horizontal position on the left side. The first bicuspid tooth was extracted; a horizontal incision was made extending from the angle of the jaw to the median line down to the bone half an inch below the base, in order to render the scar as little prominent as possible. The facial artery was secured by ligature, to prevent loss of blood. I detached the parts from the external surface of bone, and made a free incision through into the mouth with a sharp-pointed bistoury; the parts attached to the internal surface of bone were also freely separated. The edges of the wound being widely drawn apart, I divided the periosteum on the points at which the section was made and the saw applied. I had no chain saw, but was compelled to use the one in the amputating case. The points for dividing the bone were at the first bicuspid tooth of the same side, and half an inch from the origin of the ramus. At the first point, the bone was sawn through in a straight direction: this was done without much difficulty. At the second point the direction was oblique, so as to remove less from the superior surface of bone than the inferior. The moment that the saw came in contact with the osseous tumour, I experienced the greatest difficulty in making a section of it. Its hardness ranges between bone and enamel. The portion of bone being removed, the edges of wound were approximated and interrupted sutures and adhesive strips made use of. A small portion of linen was introduced into the anterior angle of wound, to carry off the secretions. Over all a bandage was applied.

The sutures were removed on the third day; the wound had healed by the first intention, throughout two-thirds of its extent. Rigid diet was observed, until the subsidence of all inflammatory symptoms.

Soon after this operation, the ship to which I was attached sailed for the Sandwich Islands; I was compelled to leave the case in other hands. Dr. Simmonds, a surgeon of high promise, took charge of my patients at Lima. Through his unwearied attention, the case of resection of the jaw was attended with the most perfect success; the merest mistake in the medical treatment might have produced a different termination.

Eight months having elapsed, I returned to Callao; my stay was so short that I was unable to see the patient upon whom I operated. I was informed, however, from the best authority, that the operation had been attended with success. A fibro-cartilaginous band had formed between extremities of bone; a calcareous deposit had taken place, by which the bond of union was rendered firm; sufficiently so for the purposes of mastication.

In all of these operations I was assisted by Dr. Suillom, a distinguished surgeon in the French Navy.

Art. IV.—*On the Reduction of Strangulated Hernia, "en masse" o "en bloc."* By Geo. C. Blackman, M. D. Newburgh, Orange county. New York.

T. B., æt. 64, had been affected with inguinal hernia on the left side upwards of thirty years. This, though large, had, with but one exception given him little trouble, having always been easily reduced and retaine by no other means than a leather strap. His general health was good. I first saw him in the month of August, 1840. On Saturday, about noon whilst engaged in raking hay, he was suddenly seized with violent pain in the umbilical region, compelling him to desist from his labour. I wa called about midnight. His pulse was quick and hard, his bowels completely obstructed, and he was suffering from nausea and violent retching There was also great anxiety of countenance. I immediately examine the rupture, and found, to my surprise, that it could readily be returne within the walls of the abdomen. The left inguinal region was exceedingly tender, and he could not bear the slightest pressure. I took about quart of blood from the arm, and gave him a large dose of castor oil, whic produced no evacuation. The bleeding gave but temporary relief. Vomiting of stercoral matter now took place, and his symptoms in all respect became worse. In the morning two neighbouring physicians were calle Active doses of croton oil were administered, followed by tobacco enema without the slightest benefit. The symptoms remaining thus obstinat after the reduction of the hernia, left us in great perplexity as to the course to be pursued. Recollecting, however, the cases related by Bransby Cooper, in Guy's Hospital Reports, for Oct. 1839, I proposed to make, if possible, the tumour again descend from the abdomen, and to cut down upon the sac, as Mr. C. directs, treating the case as in ordinary hernia, not failing, however, to open the sac. To this our patient at first consented, but finally concluded, "that as he should sooner or later die from his rupture, he might as well go then as at any other time." Nothing could induce him to change his determination.

On Monday, his bowels became tympanitic, his pulse very feeble; mortification took place during the night and he died early on Tuesday morning, being the fourth day from his attack. No means were left untried to obtain an examination of the body, but permission was not granted.

Remarks.—The attention of surgeons has of late been called to the accounts of cases similar to the above, in which the hernial tumour has been returned within the walls of the abdomen, whilst the hernial contents still remain subject to strangulation from the same cause that existed previously to their reduction. Numerous cases have been reported in detail by French surgeons, whilst the pages of the British and American journals have been almost silent with regard to this important variety of hernia. Mr. Braithwaite, commenting on a paper written by Mr. Luke on this subject, to which we shall again refer, justly observes, "that British surgeons appear to have considered the occurrence to be of such rarity, as hardly to have any influence upon the general course of practice. We, therefore, find the surgical records of our own country almost wholly barren of cases of this description, and our best and most approved writers upon the subject of hernia, are altogether silent, or refer to examples taken from the records of other countries, where the occurrence of 'reduction en masse' has excited greater attention." The possibility of this accident has been by many writers of eminence denied. Others have admitted that it may occur, but only in recent cases of rupture, where the adhesions between the sac and the adjacent parts are feeble, and unable to resist the taxis.

The facts which we propose to bring forward will prove most conclusively that both of these opinions are erroneous. We shall endeavour to present them in the order in which they have been recorded.

The first case of this kind is related by Saviard in his "*Observations de Chirurgie*," published in the beginning of the eighteenth century. Saviard was but a spectator, the operation having been performed by a surgeon of reputation for skill, who persisted that he had exposed the intestine, which, after being separated from its supposed attachments, was reduced. The patient died in forty hours, and Saviard examined the body. The stricture existed at the neck of the sac, the latter having been returned unopened, with the intestine, into the abdomen. The report of this case attracted but little notice, and it was not till a similar one occurred to Le Dran, about thirty years afterwards, that the attention of surgeons was arrested, and a violent controversy ensued, which gave Le Dran's account of it great publicity. M. Louis (*Mem. de l'Académie de Chirurgie*, tom. iv. p. 299), disputes the accuracy of his description with much warmth, and concludes his remarks by saying, "Laisserons-nous dégrader l'art le plus utile â l'humanité en tolérant des principes aussi défectueux?" The discussion of this question produced quite a division among the members of the academy, and on both sides were enlisted those of high repute as surgeons. Richter* defends Le Dran with much energy, and Scarpa justly condemns the conduct of M. Louis, who seems to have doubted the facts presented to his notice, merely because they conflicted with opinions which he had previously promulgated with more zeal than judgment. The particulars of the case which excited this controversy are briefly as follows. The *younger* Arnaud had reduced a rupture, but the symptoms of strangulation continuing unabated, he sought the advice of Le Dran. This surgeon, after hearing the details of the case, and examining the patient, concluded that the stricture existed at the neck of the sac, and that the whole tumour had been reduced *en masse.* The patient soon died, and the autopsy verified the accuracy of his diagnosis.

Although Le Dran's description of this case was corroborated by the testimony of Arnaud himself, it failed to convince the skeptical, and M. Louis in particular regarded the whole affair as fabulous. De la Faye (*Operations de Dionis*, ed. 5th, p. 324, note A.), observes that a similar case had come under his observation, and Arnaud (*Traité des Hernies*, tom. i. p. 96), gives additional proof of the accuracy of Le Dran's statement. In his *Observations on Surgery*, written more than a century ago, Le Dran has given a complete description of this variety of hernia, and has prescribed its appropriate treatment. He remarks, "when the symptoms that are inseparable from the strangulation of the intestine, subsist after the reduction, the surgeon ought to inquire into the cause. It may proceed from an inflammation of the intestinal canal which remains after the parts are reduced. A volvulus may be the consequence of that inflammation, and of the anti-peristaltic motion that succeeds it. *The strangulation may subsist after the reduction,* (as in the case already mentioned,) *because the cystis hernialis was reduced at the same time.*" After noticing the resemblance in the symptoms of these cases, he endeavours to point out certain circumstances by which they may be distinguished from each other. If inflammation be the cause, he says, the pain will be almost equal throughout the whole extent of the abdomen; if the symptoms depend upon a volvulus, the pain extending over the abdomen will be much more acute in one fixed and permanent point; if they proceed from the reduction of the hernial cyst, he declares that the surgeon cannot mistake, for he will feel a vacuity under the ligamentum Fallopianum, or in the ring; and when the parts are reduced, he will be insensible of the noise generally attending the reduction of hernia, "the whole tumour passing in a heap under the ligament (if it be crural), like a tennis ball."

In describing the case to which we have before alluded, he says, "we found the cystis hernialis in the abdomen, being about three inches in depth and eight inches in circumference, and within this cystis was enclosed half an ell of the intestinum jejunum. Embracing the whole cystis wit my hand, I endeavoured to draw out the intestine by pulling it at on end, but the entrance into the cystis was so contracted that it was impossible, and I could not effect it in any other way than by dilating this entranc with my scissors. How could the intestine have been forced out of th cystis, and returned by the taxis?" He then lays down the following rul for the treatment of these cases. An incision must be made where th hernia was; then dilate the ring, or divide the ligament, in order to draw the cystis hernialis back with the fingers or a pair of forceps; open th sac, dilate its entrance, and reduce the intestine. He observes that the sa

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[*] Programma, in quo demonstratur herniam incarceratum una cum sacco s reponi per annulum abdominalem posse contra chirurgum Gallum clar. Louis.

cannot be far distant, since it is a part of the peritoneum that lines the inside of the pelvis.

Le Blanc, in his *Nouvelle Méthode d'opérer les Hernies*, published in 1768, has also related an instance of reduction *en masse*, which occurred in his practice.

Scarpa, in his *Traité des Hernies*, referring to the subject, observes, "there is no doubt, that in recent and small inguinal hernia, the intestine, strangulated by the neck of the hernial sac, has been known, in more instances than one, to have been reduced by the taxis, and carried with it the whole of the sac into the abdomen. While the inguinal hernia is recent and not of much size, the cellular substance (between the sac and its coverings) possesses all its elasticity, and hence, the hernial sac and the spermatic cord may easily ascend towards the abdominal ring. I have had occasion to make this observation upon the dead body of a man who had an incipient inguinal hernia. The small hernial sac was capable of being pushed back into the ring with the utmost facility; and in carefully examining the parts, both within and without the belly, it appeared to me that the cellular substance which united the sac to the spermatic cord and cremaster muscle, was disposed to yield equally from without inwards, and in the direction precisely opposite: that is to say, it made an equal resistance to the protrusion and the reduction of the hernial sac. Monteggia has seen a case exactly similar, (*Instituz. Chirurg.*, t. iii. sec. 2, p. 249), although, according to his own account, the hernial sac was not very small, it adhered very loosely to the surrounding parts, and it admitted of being entirely reduced into the abdomen with great facility. Speaking of the practicability of reducing the sac in cases of scrotal hernia of large size and long standing, he considers it quite impracticable, as the cellular substance which unites the sac to the spermatic cord and cremaster muscle, has acquired such a density, that it does not oppose less resistance to the further enlargement of the hernia than to the efforts of the surgeon who endeavours to effect its reduction.

Sabatier, in his *Médecine Opératoire*, whilst discussing the subject of internal strangulations, observes that the most common form depends on the reduction of hernial tumours, in which the stricture is at the neck of the sac. He asserts that this occurs more frequently in inguinal than any other variety of hernia. He relates a case of strangulated congenital inguinal rupture, which was reduced *en masse*, unaccompanied by any gurgling noise at the time of reduction. A bandage was applied, but the symptoms still continued. The abdomen was tense and painful, and the bowels were completely obstructed. The external ring was sufficiently large to admit two fingers. The patient having been made to cough, a round tumour was felt situated at a considerable distance from the surface. Being satisfied that there was an internal strangulation, and that an operation was indispensable, the patient was requested to rise and to move around in order to cause the tumour to reappear. This was accomplished and the operation performed. The hernial sac was thickened and the stricture existed at its neck. The symptoms of strangulation soon subsided, and the patient recovered.

Dupuytren (*Clinique Chirurg.*, tom. iii. p. 553), has met with this accident in eight or ten instances. In two of his patients the hernial sac had been reduced with its contents. The tumour was made again to descend, and the operation successfully performed as in the case of Sabatier. In two of them he was unable to produce a return of the hernia from the cavity of the abdomen. A round, hard, and painful tumour was felt in the iliac fossa, not far from the superior orifice of the inguinal canal. Dupuytren performed the operation in the same manner, as if a part or the whole of the tumour was without the abdominal walls. In one of them the sac was drawn down with the forceps, and laid open when the strangulation was removed. In the other, the volume of the hernia and narrowness of the inguinal canal compelled him to open the latter throughout its whole extent, when the sac was seized, opened, and the difficulty overcome. In two of these cases, there existed an inguinal hernia on each side, only one of which was strangulated. The symptoms indicated that strangulation had taken place, and that the tumour had been reduced *en masse*, as there still existed all the signs of intestinal obstruction. To add to the surgeon's perplexity, no tumour was to be felt on either side, and there was no circumstance to point out the seat of the strangulation. In the first of these cases, guided by the false statements of the patient, he operated on the wrong side. The operation was repeated, however, on the other side, when the true cause of the obstruction was discovered and removed. In the second patient, Dupuytren cut directly on the seat of the strangulation, and as in the former case, the patient recovered. A case of crural hernia which had existed in a reducible state for twenty-eight years, became strangulated, and the man was brought to the Hôtel-Dieu on the fourth day of the strangulation. In the bend of the thigh was a firm irregular tumour, as large as a hen's egg, extremely painful, and strongly bound down by the crural arch. In the course of the day, the rupture went up suddenly, and with noise, but all the symptoms of strangulation continued, and the patient would not consent to an operation till the twelfth day. The anterior orifice of the crural canal having been exposed by a vertical incision, M. Dupuytren introduced his finger, and felt, at the depth of two inches behind the ring, a rounded elastic body, to which the patient referred as the seat of his suffering. He pulled it by the cellular substance on its exterior surface, the patient at the same time coughing; thus a grayish-white swelling of irregular surface was brought below the crural arch. A bloody fluid spirted out some inches when the sac was punctured, and the enlargement of the opening disclosed an intestinal convolution of reddish-brown colour. This was now drawn down, so as to bring its neck on a level with the crural ring, and to enable the operator to divide the contracted circle which had confined the parts. Stools passed in twenty minutes after the replacement of the bowels, and the recovery was rapid and complete. The description of this case is copied by Mr. Lawrence, who justly remarks, that the patient owed his recovery, under circumstances that would ordinarily have been deemed desperate, to the sagacity and judgment of M. Dupuytren.

Sanson declares (*Dict. de Méd. et de Chirurg.*, p. 571), that he has met with this form of rupture in three cases. A man was brought into his wards who had been treated for an attack of peritonitis. The patient intimated that he had suffered symptoms of strangulation in a hernia with which he was afflicted, but which he had himself reduced. He was in a moribund state when he arrived, and survived but a few hours. Before his death, Sanson endeavoured, but in vain, to detect the presence of a tumour which he thought must exist behind the inguinal ring. In the post-mortem examination he found the fundus of the sac, which had been completely reduced between the pubis and the fundus of the bladder. He then inquires, "Suppose that I had been called to this man in time, how could I have distinguished the symptoms under which he was labouring, from those dependent on an internal strangulation coinciding with the reduction of a hernia free from strangulation?" He relates another case, to show the difficulties sometimes attending the diagnosis of this accident. A soldier arrived in Paris in Nov. 1828; shortly after he was seized with violent colic pains, accompanied with nausea and vomiting of matter, at first bilious, then stercoral, and obstinate constipation. Leeches were applied and baths administered without deriving any benefit. During the five succeeding days, the symptoms became more aggravated, with tympanitis of the abdomen and great sensibility to pressure. Inquiries were made of the patient if he had been troubled with a rupture, to which he at first replied in the negative. He finally acknowledged, however, that for several years he had been thus affected, and that he had himself reduced it, though with difficulty, a few hours previously to the manifestation of his earliest symptoms. Although the inguinal region was examined with great care, no tumour could be felt. Indeed there was less tumefaction and pain in this than any other part of the abdomen. In passing the hand over its walls, the convolutions of the distended intestines could readily be perceived. Efforts were vainly made to produce a re-descent of the hernial tumour, and the situation of the patient became desperate. For thirteen days objections were made to the proposals for an operation, which was to consist in laying open the canal and seeking the hernia. Consent was finally given, and Sanson was about to operate, when, in again examining the abdomen, he discovered for the first time, among the projections formed by the intestinal convolutions, a kind of cylindrical column, which descended on the left side towards the iliac fossa, and was lost in the pelvis. Supposing this column to be formed by the descending colon, and that the obstruction might not be far distant from the anus; taking into consideration, also, the fact that the right inguinal region, the seat of the hernia, was the least tense and painful part of the abdomen, Sanson resolved on trying other means before he resorted to an operation attended with so much risk to the patient. The enemas previously administered had returned as soon as given, without bringing away any fecal matter. Hoping to reach the obstruction, he attempted to introduce a large and long gum elastic bougie. At first, he met with great resistance, and was convinced from the sensation made upon the fingers, that the intestine was contracted on itself at that point, so as not to permit the entrance of the bougie. Proceeding with caution, however, and rotating it between the fingers, he succeeded in introducing it the whole length. An injection of olive oil was then administered, which was thrown up with great force. This brought away a slight discharge, and he resolved to promote the tendency to the re-establishment of the passage by the most active means. As the patient was vomiting almost incessantly, no purgative could be given by the mouth. Twenty-four grains of calomel were given in the course of twenty-four hours, but this substance was rejected. For two days frictions of castor oil upon the abdomen, tobacco enemas, and the application of ice to the belly, were tried without success. Recourse was again had to the oleaginous injections, and, as before, they produced slight evacuations. They were repeated with perseverance, and blisters were applied to the inside of the thighs, on the surface of which were sprinkled a few drops of croton oil. A few hours after this application, the patient began to pass some stools, and for several days he continued to discharge an immense amount of fecal matter when all the symptoms subsided. The hernia reappeared spontaneously; it was soft, irreducible, but presented no signs of strangulation.

With regard to those cases of hernia which are reduced *en masse*, Sanson remarks, that it is evident two things must exist; first, the stricture exists at the neck of the sac; second, the inguinal canal must be greatly dilated. He further adds, that we should carefully weigh all the circumstances calculated to throw doubt on the existence of a hernia, of its strangulation, and of its reduction *en masse*, before we resort to an operation which in proper cases will be attended with the happiest results, whilst under other circumstances it cannot fail to aggravate the condition of the patient.

Richerand (*Dict. des Sciences Médicales*) says, that it is rare that hernias of long standing and of large size are free from adhesions, which almost always exist in the sac, or in the inguinal ring. This adhesion of the parts is of course an obstacle to their reduction, which in such cases can only be accomplished *en masse*. This accident, he also adds, sometimes happens in cases where adhesions exist, but the hernial tumour is of small size. Adhesions within the sac generally render the reduction of the hernia impossible, for the sac itself is generally so attached by numerous cellular and vascular bands to the adjacent parts, that without an extreme laxity of the cellular tissue, it cannot possibly be returned into the abdomen.

In the *Lond. Med. Gazette*, vol. i. p. 484, is published the account of a case of scrotal hernia which was brought to the Middlesex Hospital, and placed under the care of Sir Charles Bell. The patient, a male æt. 47, had been subject to hernia for twenty years; five years previously to his admission there had been some difficulty in reducing it. After that time he wore a truss, but continued the use of it for a short time only. On the 7th Feb. his rupture descended; he felt sick and took a black draught which he vomited. Next day he sent for a chemist, who made several attempts to reduce the hernia, but without success. Another surgeon who accompanied him to the hospital succeeded in reducing it, so that the tumour disappeared and he could even push the point of his finger into the external abdomina ring. The patient expressed himself greatly relieved after this operation He obtained no evacuation from his bowels, however, from the time that th hernia came down until he was conveyed to the hospital. Cathartics an enemas were administered, and he was bled to the extent of twenty ounces When admitted, he had constant vomiting; his abdomen was swelled an tympanitic, and exquisitely tender to the touch, particularly at the lower part on the right side, the seat of the rupture. He had a small, quick, almost fluttering pulse, and his features were sunk and pallid. The house-surgeon ordered him a dose of castor oil with laudanum, and a clyster. Thi produced three motions, and he expressed himself as being a great dea better and quite easy. His pulse was fuller, and during the greater par of the day he continued to feel easier than he had hitherto been. Bu about six o'clock in the evening, it was found that his extremities were col and damp; and he was restless, complaining of pain in his abdomen. H died that night. The hernia came down repeatedly during the day, an was each time reduced with great facility.

Autopsy. The hernia was in the scrotum, having come down shortl before death. All the small intestines were highly inflamed, distended t the utmost, and in some parts loaded with dark fluid contents. The portion of gut which was included in the hernial sac was a knuckle of th intestinum ileum, very near its termination in the cæcum. There was large duplicature of the transverse arch, with a thickened mass of omentu attached to it, which appeared from its form and the old adhesions tha united it, to be the portion which had been reduced five years before, when the rupture had descended. On examining the contents of the hernial sac, there was a fold of distended mortified gut, included within it. At the seat of the stricture, viz., the neck of the sac, the gut appeared soft, as if it were about to ulcerate, and there hung a fold of peritoneum upon the inside, which was loose, resembling an empty bag. Upon squeezing the strangulated portion of intestine, evacuating some of the air which distended it, it was found that the intestine could very easily and effectually be pushed through the external abdominal ring, so as to be hid from the sight. On looking to the inside, however, it was seen that the portion of gut had carried the neck of the sac before it into the abdominal cavity; and the duplicature of the peritoneum which has been described, being unfolded, had formed a new sac for including the knuckle of intestine on the inside of the abdominal muscles. Thus the fold of intestine was pushed through the external abdominal ring, through the spermatic canal, and through that part which is described to be the internal ring, and was reduced within the abdominal muscles, but not within the abdominal cavity. The neck of the sac had been torn off from the internal ring in the efforts of reduction, but continued to grasp the included portion of gut. In the scrotum was also observed another sac which appeared to be that of a congenital hernia. Between this and the upper sac, existed an orifice large enough to admit the passage of the finger.

In a clinical lecture delivered at the Middlesex Hospital, and reported in the *Lond. Med. Gazette*, vol. xiii. p. 923, Sir Charles Bell thus remarks: "But the next thing that occurs in the present case, and which I know you are discussing among yourselves, is the recommendation of removing the stricture without opening the sac. See, then, what took place here: I found upon cutting the crescentic edge or the little wing-like process which goes down to the sheath of the femoral vessels, and which is continued from the lower or inferior edge of Poupart's ligament, that the stricture was not taken off. You saw that I had considerable difficulty; * * I found that the stricture was not removed, that it was in the neck of the sac, and not in the tendon. Those of you who were near me must have seen with interest, that the operation appeared to be finished—that the tumour disappeared—that the intestine was removed from the eye; but the case was not satisfactory to me, so that, after it must have been supposed by you that the operation was completed, you saw me draw the whole portion of intestine down again; that then the assistant took firm hold of the sac, pulling it down so as to be on the stretch; that I passed the director and bistoury again between the gut and the sac, and cut the stricture deep a full inch within the crescentic arch. That which I cut was the edge of the stricture of the proper sac." After noticing the liability of the pressure of a truss to produce this accident he proceeds to relate another.

"A patient was brought into the hospital moribund, and died. He had been operated on by the taxis, and the surgeon was convinced that he had done everything required of him. A tumour was discovered quite within the muscular walls of the abdomen, which proved to be the strangulated intestine within the peritoneal sac; so that the surgeon had reduced the sac and the intestine within it, and the stricture which produced the strangulation being in the mouth of the sac, there was no relief, and the patient died. Here then is the first thing that you will reflect upon when this question is agitated, regarding the propriety of opening the sac. *Always remember that, in certain circumstances, the stricture is in the neck of the sac itself.*"

The cases reported by Bransby Cooper, to which we have already referred, show most strikingly what difficulties may be encountered in the treatment of strangulated hernia, and as it is our object to collect the more important symptoms by which the variety under consideration may be diagnosed, we venture to offer a brief analysis of his report. April 26th, 1839. Mr. Toulman visited Mr. I., æt. 68, who was suffering much pain in his bowels and at the pit of his stomach, attended with much vomiting. Bowels had been twice moved during the day. Mr. T. saw him at 10, P.M. Being aware that his patient was the subject of rupture, Mr. T. inquired whether it was up, and was told that "all was right." The symptoms were, therefore, supposed to arise from indigestion. Rhubarb and magnesia were ordered. Patient passed a restless night; pain referred principally to the pit of the stomach, although it extended in a less degree over the whole surface of the abdomen. Medicine had been rejected and no motion obtained. Skin cool; pulse 60, and soft; no increase of pain of the abdomen on pressure. Epsom salts with the tinct. of senna prescribed. At mid-day, Mr. T. was told that a well-formed motion had been passed. Vomiting and pain still continued, though slightly mitigated. Medicine retained. Dose repeated every two hours. In the evening, symptoms became more urgent. On examination, the right inguinal region, for many years the seat of hernia, and to which a truss had been applied, appeared unnaturally flat, especially when compared with the opposite side. This was supposed to arise from the absorption of fat, on account of the continued application of the truss. The fullness on the left side, however, did not depend wholly on the accumulation of fat, as a small hernia protruded through the external ring, which returned under the act of its examination. Still there was greater fullness on the left than on the right side. A pill of calomel and rhubarb was directed, to be followed by a purgative draught in a state of effervescence, and a sinapism to be applied to the region of the stomach.

28*th*. Patient much the same; vomiting and pain continuing; pulse calm and soft; countenance free from anxiety, and the tongue slightly furred; no further evacuations from the bowels. Small doses of calomel and opium substituted for the purgatives, and a turpentine enema administered. Mr. T. with his son again examined for outward signs of intestinal obstruction, but nothing was discovered. The cal. and op. pills to be continued. Effervescent draughts and turpentine enema to be repeated. In the afternoon, sickness had somewhat abated. Pain less urgent, but constipation still obstinate.

29*th*. Had passed a restless night; vomiting now stercoral, and hiccough. Pain of the abdomen somewhat abated; pulse intermitting, although this was not unusual with him in good health. Owing to the greater fullness on the left side, it was suspected that this was the seat of the obstruction, though the hernia on that was as readily reduced by the taxis, as the one on the other side. The propriety of an operation being now discussed, Mr. Cooper was requested to examine the patient. This was in the afternoon of the 29th. To him the fullness on the left side had not the appearance of a circumscribed tumour like hernia, but of a natura disposition of fat, the absorption from the pressure of the truss on the righ side having given rise to the inequality of size. Upon manipulation, however, a somewhat unnatural sensation was communicated as well as that o fullness, in the left inguinal canal. No protrusion could be felt on the right side, but upon desiring the patient to cough, the hernia immediately descended, but could be reduced again by the most gentle pressure. The forefinger was passed into the inguinal canal by pushing the loose skin through the external ring, and the patient was desired to cough, when complete evidence was afforded of the absence of any descent through the internal ring. The left side was therefore suspected of being the probable seat of mischief. The inguinal canal was opened and a small empty sac alone was found; neither was any light thrown upon the nature of the disease. The symptoms grew worse, and the patient died at 10 o'clock, A. M., on the 30th of April.

The autopsy proved the correctness of the opinion formed during the exploration of the previous day, that on the left side there was no existing cause for the symptoms which had proved destructive to life. The anterior parietes of the abdomen were then turned down, and the position of the intestines carefully investigated. On examining the right inguinal region, the seat of the old reducible hernia, a portion of intestine was discovered in the sac, which proved as easily reducible as it had been during life; but on drawing the intestine out of the situation of the internal ring, it resisted displacement as if some adhesions had retained it there. Looking for the cause of this retention, it was found that a portion of intestine had become strangulated in a small hernial sac, which was situated anteriorly to the larger one, conjoining the reducible hernia. This portion of intestine and its sac which strangulated it, were situated within the cavity of the abdomen, and could not have been relieved even if the exploration had been performed on the right side, unless the dissection had been made on the hernial tumour while protruding into the scrotum.

Mr. Cooper's other patient was a healthy-looking man, æt. 67, who had been the subject of inguinal hernia on the right side for thirty years. No difficulty had been experienced in its reduction, till Nov. 18th, 1834. While at stool in the morning, his rupture descended, and he immediately became sick. Being unable to reduce the hernia, he applied for admission to the hospital. He was then suffering from constant sickness; pulse soft and compressible; tongue dry and furred; skin cool, but clammy; countenance rather anxious. The hernia descended into the scrotum; but was not tender even on pressure. He walked to his bed with apparent ease. The reduction having been attempted without success, he was ordered into a warm bath and subjected to its influence for half an hour, when he became faint, and a further application of the taxis proved apparently effectual, for the hernia was returned into the cavity of the abdomen. He expressed himself relieved, and at his request the truss was again applied. An enema was given, but returned immediately, without producing any evacuation. The urgent symptoms soon returned, his pulse became quicker; he passed a restless night, with occasional vomiting, and the bowels continued obstinately constipated.

Nov. 19*th.* Obstruction still the same; vomiting of fecal matter. Enema of castor oil directed to be given and repeated every second hour, if it produced no effect. At one o'clock, P. M., Mr. C. again submitted him to a close examination, but neither in the seat of the old hernia, nor in any other situation of such protrusions, could he discover anything which would lead him to explore any outlet from the abdomen. The enemas were repeated; sinapisms were also applied to the scrobiculus cordis; and calomel and opium were given, but the patient continued to grow worse, and died at half-past six o'clock.

Post-mortem.—Peritoneum generally inflamed. In the lower third of the small intestines, a knuckle of intestine, to the extent of about two inches, was found strangulated in a distinct sac, lying between the right linea ilio pectinea and the bladder, being placed in the natural pouch of peritoneum, leading to the internal abdominal ring, and which usually forms the sac of an inguinal hernia. The sac, as seen within the abdomen, seemed about as large in size as a large walnut; its aperture which formed the stricture was of considerable size, although the stricture around the intestine was pretty firm. The sac itself was not much discoloured, but the intestine within it was of a dark greenish hue. A firm and reddish margin of omentum adhered to the front of the sac very firmly, and some bridles of adhesive matter confined the cæcum in the iliac fossa. About three inches of the ileum below the stricture, showed evidence of former constriction; the middle part of this portion being slightly dilated, thickened, opaque, and injected; whilst the two extremities were marked by an irregular patch or flake, as if cicatrization had been the result of some former physical compression.

According to Mr. Wade, Mr. C. has met with two more cases of this form of rupture, but the reports of them I have been unable to find. From the cases above described, however, it would seem that Mr. C. was entirely ignorant of the light which had been thrown on this subject by Le Dran, Sabatier, and Dupuytren, for when he suggests the propriety of exposing the inguinal canal and laying open the sac, he does not even refer to the brilliant success which had been attained by those distinguished surgeons.

Mr. Jas. Luke, one of the surgeons to the Lond. and St. Luke's Hospital, on the 25th of April, 1843, read an interesting paper before the Med. and Chirurg. Society, in which he endeavours to show that the reduction of strangulated hernia *en masse*, although rare, is not so infrequent as is generally supposed, and that the occurrence should be considered as coming within the ordinary range of probabilities of surgical practice. Mr. L. asserts that he has met with no less than five cases, and describes in detail the particulars of the operation, which was successfully performed in one of these instances. On laying open the inguinal canal, it was observed that the spermatic cord was clear and unobscured by any superjacent structure, except by a small lobule of fat which overlaid its upper part. While pursuing the examination towards the internal ring, some cellular membrane lying on the inner aspect of the cord appeared more condensed than usual in that situation; which, upon close investigation, proved to be a condensed capsule containing an empty cavity within it, sufficiently large to contain a small egg. It was thought probable that this capsule had formed an investment to the hernial sac, and was now left empty by reason of the reduction that at this time was strongly suspected to have been effected. A finger passed along this cavity entered the internal ring, the large, firm, and defined borders of which were distinctly perceptible. By pressing the finger a little more deeply within the abdomen, the rounded and tense surface of a tumour was readily detected, which after a little exposure was seen to be dark-coloured. It was clear that the hernial sac was now reached, and the fact of a reduction *en masse* was made manifest. It was ascertained by an examination of its surface, that the seat of stricture was at a considerable depth from the internal ring, and probably upwards of two inches from the abdominal parietes.

The subsequent steps of the operation consisted in freely dividing the margin of the internal ring, by which proceeding the hernial tumour was permitted to be easily drawn out into the inguinal canal and opened, without the danger which would have attended the attempt, had it been made while it lay deeply within the parietes. The sac contained a small quantity of very dark-coloured fluid, and about six inches of small intestine of a dusky red colour, with one small black spot on its surface, the whole being strictured at the neck of the sac. The stricture was clearly seen and easily divided, after which the contents were readily reduced within the general cavity of the peritoneum, and the wound closed by two sutures and adhesive plaster. The extensive division of the abdominal parietes rendered extra precautions necessary against reprotrusions of the intestine, and graduated compresses and bandages were applied over the part. Immediately after the operation, the symptoms of strangulation began to subside, and the patient perfectly recovered.

Mr. Robert Wade has reported a case in the *Lond. Lancet*, for July, 1845, which was attended with considerable difficulty in the diagnosis, but in which an operation was performed with success.

April 4th, 1845. He visited Mr. B., an active, healthy man, æt. 75, who had been afflicted with inguinal hernia on both sides for nearly thirty years. The tumours were sometimes as large as a good sized pear, occasionally descending into the scrotum, but were always easily reduced, and generally kept up by a double truss. I was informed, says Mr. W., that two days previous to my visit, Mr. B., on getting out of the bed in the morning, experienced a slight, but momentary, darting pain in the right inguinal region; on going to the water closet soon afterwards, he found that his bowels would not act, an unusual circumstance with him. Towards the afternoon he began to vomit; the fluid ejected soon became stercoraceous, and at my visit had a highly feculent smell and appearance; the breath was also highly fetid. Upon a careful examination, not the slightest appearance of hernia could be detected on either side, nor was there any tenderness on very firm pressure over the inguinal canal, or any part of the abdomen; the pulse was about 90, regular and tolerably full, except during the sickness, which caused great faintness. Cathartic enemas had been administered, croton oil, calomel, and other powerful purgatives had been taken without producing the desired effect. It was evident that there was obstruction of some part of the intestinal canal, and the herniæ were strongly suspected of being its seat. The only reason for this suspicion, however, was the slight darting pain in the right inguinal region, felt on first getting out of bed. The spermatic cord was more distinctly felt on the right than on the left side, and from all the circumstances of the case, Mr. W. was led to the conclusion, that the right hernia, with its investing sac, had been reduced *en masse* by the patient, and that the obstruction existed in the neck of the sac on that side. The symptoms continued to grow worse, although there was not the slightest tenderness on firm pressure in any part of the abdomen, nor could any tumour be felt in the neighbourhood of the rings. The patient was assisted out of bed and made to cough, but although the rupture on the left side was forced down, there was no descent on the right; the attempt could not be persevered in, for he soon became so faint as to fall backwards on the bed, with a pulse scarcely to be felt. Although the symptoms indicated obstruction of the intestinal canal, rather than any serious mischief of the intestine itself, yet taking into consideration the exceedingly depressed state of the patient's nervous system, the extremely harassing sickness from which he had now for some length of time suffered, as well as his rather advanced age, it appeared highly desirable, says Mr. W., that some more efficient means should soon be adopted for his relief. I therefore proposed to cut down upon the right inguinal canal, to lay it open, and endeavour to bring the hernial sac into view, so that it might be opened, and supposing that no stricture should then be found, I would with confidence attempt the operation on the other side. The patient was again assisted out of bed, and made to cough, when the hernia on the left side quickly descended as before, and after a little perseverance in the coughing, assisted by pressure on the abdomen, the hernial tumour on the right side protruded about half an inch through the external ring, but could not be made to advance further. On pressing the protruded parts between the finger and thumb, the patient said he felt a slight degree of tenderness, but so slight as scarcely to be perceptible, and the firmest pressure around the ring on either side did not cause any uneasiness. The abdomen became a little tumid and tympanitic. The patient's legs hanging over the bed, and his head and shoulders supported by a pillow, the operation was commenced by transfixing a fold of the integuments over the right inguinal canal, to the extent of three and a half inches. Some layers of fascia were then divided and the canal laid freely open by a division of the tendon of the external oblique muscles. On opening the sac, which was much thickened and which closely embraced the intestine, about half a teaspoonful of a light brown serous fluid escaped, and a small knuckle of intestine, rather red from congestion, was observed. The finger was then passed within the sac, along the intestine, which at the extent of about three inches, nearly as far as the finger could reach, was found firmly embraced by a membranous band. This was divided by a probe pointed bistoury passed carefully along the finger, when the strangulated portion of intestine was easily reduced. There was no omentum in the sac. The stricture was evidently formed by the neck of the sac, which could be felt completely surrounding the intestine, being very much thickened and puckered at its under part. The wound was dressed, and the patient expressed himself as having obtained immediate relief, especially from his distressing sickness. Bowels acted freely the next day, and he continued to improve, and eventually although slowly recovered. The most unfavourable symptom noticed after the operation was a considerable degree of drowsiness, and the patient required to be roused to answer questions, when he would again relapse into his drowsy state.

From all the facts recorded, it would seem that this accident may occur under three different circumstances: 1st, spontaneous reduction; 2d, as the result of the taxis; 3d, from an incomplete operation. An example of the first of these varieties is to be found in the *Leçons Orales* of Dupuytren. He was called to treat a case of crural hernia, which resisted all attempts at reduction by the taxis, but finally returned spontaneously *en masse.* As the symptoms of strangulation remained, an operation was deemed advisable and successfully performed. Most of the cases have been the result of the application of the taxis without an operation. In addition to those already mentioned we may add an instance which occurred to M. Blandin at the Hôtel Dieu, in which the rupture (inguinal) was of large size. J. B. Demeaux, in his "*Recherches sur l'Evolution du sac Herniaire,*" relates a case which was communicated to him by M. A. Berard, which with those before described, triumphantly refutes the assertion of Scarpa, *that the reduction en masse, can only occur in recent cases of hernia, and in those of small size.* The following are the particulars of this case:

A clergyman had been afflicted with crural hernia on the right side for several years, which could readily be reduced, or be made to reappear. The patient had never worn a truss. Whilst engaged in speaking, the rupture descended; the patient himself caused it suddenly to return, when he was immediately seized with violent pains accompanied with vomiting and all the symptoms of internal strangulation. The hernia was made to descend again from the abdomen, but the symptoms were not mitigated. About forty-eight hours after the first reduction, efforts were again made by the taxis to reduce the tumour, but instead of subsiding, the symptoms became aggravated and more alarming. The operation was performed on the third day, and the crural ring was perfectly empty, although it was somewhat enlarged. On the introduction of the finger, a tumour was detected within the abdomen, which the surgeon attempted to draw down with the forceps, in which he but partially succeeded. Discovering in this tumour a hernial sac very much thickened, the operator incised it, when some bloody serum which it contained escaped; the finger was then introduced, which soon reached the intestine itself, and caused the discharge of a large quantity of fecal matter. The operation was not followed with any benefit and the patient survived it only thirty-six hours. The autopsy revealed 1st, the traces of a subacute peritoneal inflammation; 2d, a hernial sac situated chiefly within the abdomen; 3d, the neck of the sac adhering to a fold of the intestine which was perforated on the side of the cavity of the sac.

In the *Bulletin Chirurgicale*, tom. i. p. 363, a singular variety is described by M. Laugier, which consists not only in the reduction of the sac and its contents, but an *arrachement* of the neck, which, detached by the attempts at the taxis, has been returned within the abdomen, maintaining, however, its proper relations with the protruding portion of intestine. The symptoms in his case continued unabated and the patient rapidly succumbed. On opening the abdomen, a fold of intestine about a foot in length was discovered in the hypogastric region, surrounded by a flat circular band, from three to five millimeters in length, and which at no point adhered to the intestine which it strangulated. But that which excited most surprise was the discovery of something resembling the finger of a glove truncated at its summit, which was situated near the orifice of the inguinal canal. Its margin was slightly fringed, and it was evident that the separation at its neck was owing to a circular rupture. It adhered by its base to the upper orifice of the inguinal canal, and it was easy to perceive that it arose from the peritoneum lining the abdominal walls in the vicinity of the ring, which had been drawn inwards by the intestine.

Sometimes, in operating for strangulated hernia, the surgeon mistakes the hernial sac for the intestine itself. Errors of this kind, says Demeaux, have been committed by surgeons of great renown, and if it occasionally happens that the intestine is opened when it was supposed that the sac only was being divided, in other cases, this itself has been detached from the adjacent parts and returned into the abdomen with the intestine which it contained. Such was the case related by Saviard, and as Demeaux remarks, it is probable that many more would have been recorded, had surgeons not been anxious to conceal their errors. This last writer reports two cases of this nature, one of which was communicated to him by M. Denonvilliers; the second occurred to M. Velpeau, and an account of it was published in the *Gazette des Hôpitaux* for March, 1842.

The case on which M. Denonvilliers operated was one of crural hernia. In the first stage of the operation nothing unusual presented itself to his notice. Arriving at a greater depth, he discovered a tumour which he supposed to be formed by a portion of the intestine; this was isolated from the surrounding parts, its debridement accomplished when it was reduced without difficulty. When the wound was dressed, the surgeon began to entertain some doubts as to the result of the operation. He conjectured that the hernial sac might not have been opened. He waited, however, for a couple of days, when the symptoms continuing unabated, he determined to finish the operation which he had commenced. With the aid of the forceps, he seized the sac and drew it to the surface, when the stricture which existed at its neck was divided. The case of M. Velpeau was likewise one of crural hernia. When he arrived at the sac, he supposed he had reached the intestine, which he thought was deprived of its peritoneal covering. The tumour was detached and reduced. The patient soon died, and on the post-mortem examination, it was found that the rupture had been reduced *en masse.* J. B. Demeaux, in his *Recherches sur l'Evolution du Sac Herniaire*, p. 37, describes another displacement of the hernial sac, viz., *its inversion.* The facts of one case only have come to his knowledge, for which he is indebted to M. Charles Fournier, *ancien interne* of the Hôtel Dieu. In this, the surgeon supposed he had laid bare the intestine; he isolated it from the surrounding parts, divided the ring and reduced the tumour. The sac was not opened, but by pressure it became inverted. As mortification had already commenced, death rapidly supervened in consequence of the effusion of fecal matter into the cavity of the abdomen.

In the *Provincial Medical Journal* for Feb. 1843, is reported a case which occurred in the practice of Mr. Banner at the Northern Hospital, Liverpool. The patient, a male, æt. 42, had been subject to inguinal hernia for many years, but had always been able to return the gut. The gut had descended two days previous to his admission, when he was seized with great pain in the bowels and constant vomiting; he was unable to return the tumour as usual (which had always descended as low as the scrotum) and sent for a surgeon who bled him, and used the taxis, and at last succeeded in returning the contents of the tumour, which had been the size of an egg. The symptoms of strangulation continued; he was again carefully examined; but the ring could be clearly felt, and there was not the least indication of a tumour. The case was treated actively for inflammation, but the patient died on the second day after admission. On examining the body, a small knuckle of intestine was found just within the inner ring, strangulated by the sac which had been returned with the intestine; this portion of gut was mortified and the peritoneum was in a high state of inflammation.

After this array of facts, the possibility of the reduction *en masse*, can no longer be denied, neither can it be maintained with any degree of propriety that it can occur only in recent cases, and where the hernia is small. Although Scarpa strongly advocated this opinion, the very example which he quotes from Monteggia, goes to disprove his assertions on this subject, as "the hernial sac was not very small." His observations apply only to the empty sac, and on this point we believe there is great unanimity of sentiment among surgical writers. But it should be remembered that we are considering those cases of rupture, where intestine or omentum is contained within the sac, and where adhesions exist between these parts and the neck or fundus of the sac. It seems to have been the opinion entertained by almost all writers on hernia, that shortly after its protrusion, the whole sac contracts such intimate connections with the surrounding parts as to render its reduction impracticable. Arnaud was the first to observe that these adhesions were not so extensive as was generally supposed. This point has been most fully investigated by a recent writer, to whom we have already more than once alluded, viz., J. B. Demeaux. He remarks, p. 22, that the anatomical researches in which he has been engaged, have enabled him to determine with precision, the adhesions of the sac and its neck with the adjacent parts. Referring to the organization of the neck, and the changes which take place not only on its serous but cellular surface, he says, "the first thing which arrests the attention of the observer, is the diminution and almost entire disappearance of the adipose substance in the cellular tissue, even in subjects truly corpulent; perhaps it would be more correct to call it the transformation of the cellular-adipose tissue into a new substance which contains a large number of blood-vessels. Most frequently we perceive through the transparent peritoneum, around the circumference of the hernial opening, this rich vascular net-work, converging from every point towards the neck, and afterwards spreading itself over the upper part of the sac, so as to be insensibly lost in the cellular substance with which it is continuous. Independently of these vessels, we may also detect a layer of filaments, the nature of which it is not easy to determine; they cross each other in different directions, and I have compared them to the tissue of the dartos muscle. Now this vascular transformation of the sub-peritoneal tissue on a level with the neck, does not extend over the whole surface of the hernial sac. Thus, whilst at the neck of the sac, the peritoneum and the subjacent tissue are most intimately united, the two layers remain distinct at all other points. Besides the cellular tissue, we meet with a layer which I consider analogous to the fascia superficialis; it is the fascia propria of the peritoneum. The vascular tissue on a level with the neck of the sac, is situated between this fascia and the peritoneum. On its external surface this fascia preserves its cellular aspect, and is united to the more superficial parts only, by a loose tissue from which it may be easily detached. Thus in every instance of the reduction *en masse*, the sac draws with it this subperitoneal tissue and the fascia propria. This membrane, thin in its normal state, becomes thickened when a hernia exists, and establishes a kind of demarkation between the sac and its external covering."

Having thus clearly established the existence of this accident, and having endeavoured to throw some light on its mechanism, we proceed in the next place to notice some of the circumstances by which it may be diagnosed. A careful perusal of the cases recorded must convince the reader that this is in some instances attended with considerable difficulty. In the case which occurred to myself it may be said, that the existence of strangulation at the neck of the sac is by no means substantiated. True we have not positive proof on this point, but when the symptoms are compared with those under which the patients of Mr. Cooper and others laboured, it becomes exceedingly probable. We are aware, that in cases where inflammation has been excited previously to the reduction of a rupture, the effect will not cease on the removal of its mechanical cause. Mr. Lawrence refers, in a note, to an example related by Camper in his *Icones. Hern.*, p. 3, in which death occurred from peritoneal inflammation where an inguinal hernia had been returned without delay. But in my patient there was not the slightest evidence of any derangement of the bowels whatever, till he was suddenly attacked in the field with violent pains in the region of his rupture. Again there was a peculiar sensation experienced at the time of the reduction of his rupture, which I have at no other time noticed, and which has been tolerably well described by Le Dran. Mr. Robert Wade has collected the principal signs, which denote the reduction *en masse* viz., the absence of that fullness of the ring and cord caused by the presence of the hernial sac; an unusual largeness of the aperture, through which the hernia has descended, ascertainable by the introduction of the finger; a fixed circumscribed pain in the neighbourhood of the ring; and in some cases a tumour has been felt which has been tender on pressure, in the same situation, deeply seated within the abdominal muscles.

In the treatment of these cases, the propriety of the proceedings resorted to by Dupuytren and others, can no longer be doubted. It becomes our duty to produce if possible the redescent of the tumour, to expose and divide the sac, with the stricture which exists at its neck. But what are the relations of the hernial sac thus reduced and the openings through which it had before descended. It may be found, says Demeaux, in different situations. In some cases, the peritoneum lining the abdominal walls becomes thrust backwards so as to permit the sac to lie in the subjacent tissue, between it and the aponeurotic layers. In this case, the reduction is complete and the tumour cannot be detected from the surface. These cases are liable to deceive the surgeon, who believing that he has done all that lies in his power, reposes in false security. In these examples the sac is so situated that it is with great difficulty that it can be made to present to the external ring; indeed it is impossible for the patient. by any efforts of his own, to cause the hernia to redescend. At other times the reduction *en masse* may be incomplete, when the rupture may be made to descend with very little effort. Sometimes, says Demeaux, the tumour cannot be reproduced, because the ring is not sufficiently dilated to afford it passage. In such cases a free division of the inguinal or crural canal will be the only alternative, when the sac may be seized with the forceps, drawn down, and the stricture readily divided. The opinions of Demeaux are corroborated by the investigations of M. J. Cloquet, who has probably devoted more attention to this subject than any other writer. He observes, (*Recherches sur les Causes et l'Anatomie des Hernies Abdominales*,) "I have accomplished reduction in a mass in more than twenty instances, partly of hernia, eithe strangulated or otherwise irreducible, partly of empty hernial sacs. It is effected most easily in internal inguinal than in crural, and lastly in externa inguinal hernia. I have never succeeded in the umbilical ruptures o adults." He considers this kind of reduction almost impossible in cases of external inguinal hernia, and if accomplished at all, he thinks it mus be incomplete, and that the swelling must reappear as soon as the efforts a reduction are discontinued. If the reader has carefully examined the details of the cases which we have collected, he cannot fail to perceive tha this accident may happen in cases of external inguinal hernia of long standing and where the sac is of large size. He must also have discovered that the reduction in such cases is by no means necessarily incomplete, bu that in several instances the sac was pushed completely through the ring.

Art. V.—*Remarks on Trismus, or Tetanus Nascentium, and on its identity with Traumatic Tetanus in the Adult.* By Wm. O. Baldwin, M. D., of Montgomery, Ala.

Whilst the ignorant and superstitious mother, in beholding her babe the victim of tetanus nascentium, attributes its production to some incomprehensible necromantic agency, the nature of its cause has, to the educated and enlightened physician, been a subject of almost equal mystery; certainly at least, his attempts to explain it have often been quite erroneous.

Conflicting and discordant indeed have been the numerous propositions entertained and discussed from time to time, relative to the origin and essential nature of this disease. To enumerate, without comment, some of the causes to which its production has been ascribed, I will begin with "influence of stars," "defective clothing of the mother during pregnancy," "vitiated atmosphere and defective ventilation," "irritation of the intestinal canal induced by retained meconium," "excessive purgation," "improper swathing," "influence of cold," "smoke of burning wood," "pouring cold water on the head in the performance of the office of baptism," "applying scorched linen or cotton to the umbilicus," "imprudence in diet in the mother," "defective nutrition to the child," and more recently to imperfect ossification of the cranial bones and "*position*" of the child after birth.

The rehearsal of the various theories or superstructures which have been based upon even the more plausible of these *first propositions*, would consume time unprofitably, whilst most of them are so fanciful and vulnerable in themselves, as scarcely to require a moment's consideration in order to determine their fallacy.

Having lately witnessed a case or two of the disease, I have been led to a more serious contemplation of its phenomena, and, claiming nothing as original, shall endeavour to sustain the proposition of its identity with tetanus in the adult, believing it to be *generally*, if not always *traumatic*, and locating its exciting cause in the umbilicus. In my remarks, which will be mostly analytical, I shall of course be compelled to draw largely from the writings of others. Many of the authors not being accessible in their original form, I shall be compelled to quote them second-handedly, or through others, and supposing them to have been correctly quoted in the first place, I may at times fail to credit the author from whom I obtained them, and simply give reference to the original papers. When this is done, however, it will only be for the purpose of saving time and trouble.

Trismus nascentium, although more especially a disease of tropical climates, is not only met with in every climate, but in every season. Co-existent with tetanus in the adult, no country under the sun is exempt from its ravages. In the April number of the *Amer. Journ. Med. Sci.* for 1846, in an article by J. M. Sims, M. D., on this subject, he remarks, "unlike traumatic tetanus, this disease is encountered in every climate and under extremes of temperature," plainly implying the assertion that traumatic tetanus is *confined* to particular climates, which is not sustained by the authorities on this subject. All the authors I have consulted on the subject agree in saying it is more especially a disease of warm climates, but equally unanimous are they in saying it is a disease met with in every place and season, amid tropical suns as well as polar snows. Curling, in his Treatise on Tetanus, p. 25, remarks, "tetanus is a disease met with in every part of the globe,"

&c. In Tweedie's *Lib. Prac. Med.*, p. 71, vol. ii., we find a similar remark, and if it were necessary I could multiply corroborative authorities. I am thus particular in making mention and reference to this fact, as I conceive it to have an important bearing upon the points at issue.

Tetanus, at whatever age it attacks, is proverbial for its fatal tendency. In Curling on *Tetanus Nascentium*, p. 106, we read, "Dr. Hancock remarks it is so frequent and fatal in the colonies of Essequebo and Demerara, that at an average estimate it kills one-half of the whole number of infants born there, and the fatality he reckons at least, at ninety-nine in a hundred. Mons. Fourcroy calculates that at St. Dominique, eighty out of every hundred of the negro children die of it before the ninth day. Mr. Morrison, who practised for several years at Demerara, has never known one authenticated case of recovery." These statements, and other corroborative statistical records show the disease to be more universally fatal in the infant than adult. The discrepancy in this respect, however, is easily accounted for by the difference in their capacity for resisting morbid impressions. Notwithstanding this difference is admitted, which we could hardly suppose to be otherwise, yet in some instances its mortality in the adult will bear an equal ratio. "Sir James McGregor alludes to several hundred cases (of tetanus in the adult), observed in the campaigns of Spain and Portugal, very few of which were cured. Mr. O'Brien mentions that out of about *two hundred cases* which he witnessed in the Peninsular war, *not one recovered. Curling on Tetanus*, p. 21.

The period of attack in traumatic tetanus in the adult, and tetanus nascentium, shows a great and striking similarity of action in the cause producing them. All authors agree as to the time of the supervention of tetanus in the infant, fixing it from the fourth to the fourteenth day after birth, occasionally a few days later, but most generally about the ninth day. This is also about the time allowed by authors for traumatic tetanus to develop itself in the adult, after the reception of the wound. In general the tetanus supervenes between the fourth and fourteenth day after the infliction of the injury; sometimes in the second week is the most common time of all. *Watson's Pract. Med.*, p. 312.

A fact which cannot be reconciled, except with the view of its traumatic origin, is that tetanus nascentium *always* supervenes within the time of the dropping off of the cord, and the time which we would reasonably allow for the perfect and healthful cicatrization of the umbilicus.

For the purpose of comparison, I will as briefly as possible enumerate the most prominent symptoms observed in traumatic tetanus in the adult. Some authors mention various premonitory symptoms as indicating its approach, such as a feeling of weariness, watchfulness, loss of appetite, headache, constipation, pains in the back, &c.; but as all of these are the common precursors of many other species of indisposition, they cannot be properly classed as preceding the attack of one more than another. Larrey has observed that the symptom which undoubtedly announces the approach of traumatic tetanus, is deep and severe pains in the wound extending to the spine, but even this symptom has not been generally noticed by other writers. The first unmistakable symptom, then, indicative of its approach, may be said to be, a feeling of weariness or stiffness about the muscles of the jaws and throat, easily fatigued in the act of mastication and deglutition; also, stiffness and pain in the muscles of the neck, with repugnance to turning the head, sometimes accompanied, but generally succeeded by twitchings of the muscles of some part of the body. This stiffness in the muscles of the jaws increases slowly, until after a time the jaws are completely closed. Though the closure of the jaws is generally very gradually effected, yet occasionally violent symptoms manifest themselves at the commencement of the disease, and the jaws are suddenly and firmly locked. Other muscles of the body and extremities then partake of the spasm and rigidity; sometimes one set is more affected than another, drawing the body in different directions; violent pain in the præcordia, extending back to the spine; difficult and irregular breathing; frothing at the mouth; a particular state of the countenance denominated by some the true "*risus sardonicus*," produced by the contracted state of the muscles of the forehead; brows and corners of the eyes, the expanded nostrils, alæ of the nose raised; corners of the mouth elevated; eyes prominent and fixed; veins of the face swollen; giving upon the whole a most frightful look and anxious expression to the countenance, and evincing the greatest degree of bodily pain and suffering.

In some instances the tongue is contracted and immovable, and nothing but a thick frothy saliva exudes through the teeth and lips; in other instances it is protruded and often lacerated by the teeth during the severe clonic spasms, producing considerable hemorrhage from the mouth. The larynx is raised, the tone of the voice considerably modified, the act of articulation being always unpleasant, sometimes painful, and occasionally the power of speech lost altogether. The voluntary muscular system generally is in a state of tonic rigidity more or less all the while, sometimes amounting only to a slight stiffness; at others perfectly rigid and "as hard as a board." It has been remarked by some, that the flexor and extensor muscles of the fore-arm and hand are generally unaffected. Clonic spasms come on at various intervals, and sometimes with perfect regularity, increasing in violence and frequency with the aggravation in the other symptoms. I have seen a case of traumatic tetanus in an adult negro, when they came on with regular intervals of two or three minutes, lasting ten or fifteen seconds, the spasms subsiding during the intermissions into a state of semi-rigidity. These spasms came on with a "jerk," as the patient aptly termed it, producing excruciating pain in the præcordia, extending back to the spine, and suspending respiration for the time. In this case the most disagreeable feeling complained of by the patient during the intervals of the spasms, was a distressing sensation of fullness and tension about the præcordial region. The extremities are generally cool, and the surface bathed in a profuse perspiration, especially the head, face and breast. The pulse, generally full or natural at the commencement, becomes small and frequent as the disease advances. Attempts to swallow, and often the effort to speak, change of position, or noise, sudden draughts of air, &c., bring on paroxysms of clonic spasms. The function of the stomach and bowels, occasionally unimpaired, is generally deranged, constipation being a pretty constant attendant. The sphincters of the anus and bladder are generally in a state of firm contraction, giving rise itself to constipation of the bowels and retention of urine, which is sometimes involuntarily and forcibly expelled. Amidst all this bodily anguish and pain, strange as it might seem, the mind still holds her empire, and generally with all her pristine beauty.

The disease has been variously divided, according to the particular sets of muscles which are more especially the seat of spasm—into *trismus*, *opisthotonos*, *emprosthotonos*, and *pleurosthotonos*—tetanus, by some authors being only used to denote that particular form of the disease where the muscles are all equally affected by the spasm—the body being perfectly straight and rigid. These divisions, however, are of no practical value.

These comprise most of the symptoms observed in acute tetanus, but, of course, are subject to various modifications, not only from age, climate, and habits of life, but frequently differing to some extent when all apparent external causes are equal.

From these symptoms the patient may gradually recover; they may terminate in death at an early stage of the disease, during the violence of the clonic spasms, or they may continue for days, increasing in intensity; the breathing becoming more difficult and hurried; the intervals between the clonic spasms shorter; the perspiration becoming more profuse, cold, and clammy; the pulse becoming weaker and more frequent, and, at length, imperceptible at the wrist. The patient sinks generally from the fourth to the eighth day, but more often about the sixth—either from asphyxia, or the system, being worn out by the violence and intensity of bodily pain and suffering, succumbs, completely exhausted. Occasionally, at a late stage of the disease, delirium supervenes. Sometimes the spasms and rigidity of the muscles are ameliorated before death. In the case of traumatic tetanus before alluded to, as occurring in my own practice, and which terminated fatally, the spasms subsided almost completely twenty-four hours before death took place—the patient retaining the full possession of all his mental faculties up to the last moment.

It is not so easy to institute an analysis of the symptoms of the disease as it occurs in the two ages—as in the adult we have the benefit of the patient's own narration of his feelings and sensations, whereas, in the infant, we are deprived of this most valuable index to the disease, and aid in its treatment. The symptoms, however, which are visible to our senses, I will speak of, and draw such inferences as may be deemed legitimate.

In the infant, the first indication of tetanus is manifested to the mother by its fretfulness, and ineffectual attempts to nurse. Taking the nipple in its mouth, and making one or two efforts to draw, it suddenly throws itself off, continuing to fret, and repeating the effort to nurse again in a few minutes, but with no better success. From this *initiatory* symptom, taken in connection with the other symptoms which follow, we may reasonably infer the existence of the *same feeling of weariness, stiffness, and pain in the muscles of the jaws, and those of the throat assisting in the act of deglutition*, which the adult describes to us *in the commencement* of his attack. The symptoms, however, which are first observed by the physician are the stiffness of the jaws, sometimes firmly and tightly closed, at others separated at a short distance and immovable, frothing at the mouth, and muscular twitchings brought on by the most trivial causes. From the countenance of the little sufferer during the clonic spasms, the feeble moan or grunt just as they come on, the interruption to the breathing during the paroxysm, followed by the lusty cry as it passes off, it seems to me that we cannot resist the inference that the *same præcordial pain and agonizing sense of suffocation* are present, so much complained of by the adult patient. In the whole train of other symptoms which follows—such as the various kinds of abnormal muscular action; the character of the breathing; temperature of the surface; profuse perspiration; condition and character of the pulse; extreme nervous impressibility, and "*risus sardonicus*," there is no difference to reconcile,—for I apprehend no one will contend there is a greater want of uniformity in the symptoms of the disease as they occur in the infant and adult, than is observed in different instances in the adult. I have seen one case of tetanus nascentium answering completely to the description of what has been termed *genuine tetanus* in the adult.

The muscular rigidity was so diffused and uniform, that the muscles of the jaws, bodyand extremities, were all perfectly and equally rigid—so much so, that the hand could be placed under the middle of the child's back, and it raised up without bending in any way. Authors, on this point, I believe, are pretty unanimous. I will, therefore, only quote one which occurs to me just at this moment. Cullen, in a paragraph upon tetanus nascentium, (*Caldwell's Ed.*, vol. ii. p. 172,) in speaking of the "locked jaw," (which is by far the most uniform symptom present in all instances of tetanus, so far as abnormal muscular action is concerned,) remarks, "but this is not the only symptom, as for the most part *it has all the same symptoms* as the opisthotonos and tetanus so called, and which occur in other varieties of tetanic complaints, above described."

The disease is of much shorter duration in the infant than adult, terminating generally in from six to forty-eight hours after the first symptoms are observed—most often in about thirty, or thirty-six hours after the attack, but occasionally it does not terminate until the third, fourth, or fifth day, or even later, when it is termed *chronic.* Here again we perceive a difference in the disease as it occurs in the two ages—terminating in death, in a much shorter time in the infant than adult, *generally*—the cause of which, however, seems sufficiently obvious to my mind. The *nervous impressibility* of the infant is much more delicate and acute than that of the adult. M. Hall, in his work on the "*Physiology of the Nervous System,*" p. 44, in speaking of the impressibility of the "extreme filaments of the excitor nerves," remarks, "these phenomena are most obvious in the lower orders of animals, *and in the very young of the higher orders.*" This fact may also be attributed to the cause before alluded to, as making it more uniformly fatal in the infant than adult—the fact of the young and delicate infant being more easily exhausted by morbid impressions, and not having the power of resisting them to the same extent.

The post-mortem appearances in tetanus in the adult are not always uniform, but the abnormal exhibitions found about the medulla spinalis and its investing membranes, are so generally present, as to entitle them to be regarded as the seat of pathological changes in this disease. I will briefly enumerate some of the morbid appearances which have been detected in adult patients dying of tetanus.

On examining the body of a boy who died of traumatic tetanus on the fourth day after the injury, "it was found that the cervical portion of the spinal cord, to the extent of an inch, had undergone considerable softening, and that the membranes covering this portion were inflamed and much thickened." *Curling on Tet.*, p. 35.

The following are the post-mortem appearances in a case published as an example of idiopathic tetanus. "The body being examined, a great quantity of fluid was found in the theca vertebralis; the membranes enveloping the spinal marrow were of a rose colour, the minute vessels being *turgid with blood.*"—(*Ibid.*)

H. Sandwith, M. D., *London Lancet*, vol. iii. No. iv. p. 322, after having detailed at length a case of traumatic tetanus, remarks, "In this and other tetanic cases, there was *increased vascularity* of the cellular membrane surrounding the theca vertebralis, together with increase of fluid within the theca, and the tunics, as well as substance of the medulla, were *extremely vascular*.

Baron Larrey states that in the *numerous inspections* of the bodies of the soldiers who died of tetanus, in the Hospitals of Louvain, after the battle of Waterloo, which were made with the greatest care, he *constantly* discovered evident traces of inflammation on the spinal cord, with serous effusion more or less of a *reddish colour* within the sheath."—*Clinique Chirurgicale*, vol. i. p. 88.

Ollivier discovered depositions of a *red and very consistent fluid* in the cellular texture between the dura mater of the cord and the bony canal of the spine in the dorsal region," &c.—*Curling*, p. 39.

"In some few instances *blood has been found extravasated in the spinal sheath*." This was noticed in a case of traumatic tetanus recorded by Dr. Funk. * * * * In another case of traumatic tetanus, mentioned by the same author, a similar appearance was observed.—(*Ibid.*, p. 37.)

"In an interesting case of tetanus given by Dr. Reid, in the *Transactions of the Association of Physicians in Ireland*, vol. i. p. 113, *great vascularity and an effusion of blood were found* round the spinal marrow." —*Marshall Hall on the Nerves*, p. 214.

In *tetanus nascentium*, as in tetanus in the adult, the anatomical lesions observed after death are not always the same. Sometimes every part of the body is found to present a perfectly normal appearance, and like it too, most generally *spinal* lesions are observed.

"Dr. Goëlis, of Vienna, in the examination of children who have died of this disease in the Foundling Hospital of that city, frequently found an appearance of *increased vascularity* in the substance of, and in the membranes enveloping the upper part of the spinal marrow. The same has been observed by Dr. Thompson, of Philadelphia.—*Curling on Tet. Nascentium*, p. 109.

M. Billard (*Stewart's Ed.*, p. 490), after remarking that he had only witnessed two instances of the disease, both of which proved fatal, observes, he "found on dissection nothing more than an effusion of a quantity of *coagulated blood in the spine*."

In the April number of the *Amer. Journ. Med. Sci.* for 1846, p. 365, in the article by Dr. Sims, before referred to, he found on dissection, in a negro infant having died of this disease, a "*coagulum of blood occupying the spine in its whole length*, enveloping perfectly the medulla spinalis; thicker as it approaches the brain. Spinal veins full of black blood." In the "brain, superficial vessels full of black blood, particularly posteriorly." Nothing else remarkable in the post-mortem appearances.

In a case of tetanus nascentium which occurred in my own practice, I will here simply give the post-mortem appearances. On the 15th March, 1846, I examined the body of a well-formed and fully-matured male negro infant, the property of Judge Goldthwaite, of this city—having died of tetanus nascentium a few hours after it had completed its sixth day from birth. Autopsy seven hours after death. Present Drs. Sims, Boling and others.

The body generally flexible; the toes and fingers firmly clenched. The umbilicus enlarged, hardened, and a portion of the surface to which the cord was attached looks dry and red; the cuticle is denuded in two small places, about half an inch from the umbilicus, and on the right side.

Head.—Membranes and substance of the brain natural. Dr. Sims thinks the most bloodless brain he ever saw.

Spine.—A thick and very firm coagulum of blood found covering the posterior and lateral surfaces of the medulla spinalis, extending the whole length of the spinal column.

Lungs, heart and abdominal viscera normal.

The reader may here draw his own comparisons, and appreciate, if any, the inconsistency of the pathological anatomy in the disease, as it occurs in the two ages. In both instances, it frequently occurs that no morbid lesion is detected in any part of the body; in both, lesions about the spinal cord are *generally* detected, which sometimes are *identically* the same, and in the other instances bear a sufficient resemblance to prove them results of the same morbid action. I may, however, allude to this subject again, when I come to speak with more especial reference to the pathology of the disease, and endeavour to reconcile with the view of their identity, that which some may contend shows a difference in their morbid anatomy—the fact that *extravasated blood* is perhaps more *generally* found about the spine in the infant than adult.

It would be well, perhaps, before leaving this subject, to remark, that changes in other organs have been observed after death, and reported as morbid states belonging to this disease—such as a turgid state of the vessels of the brain, abscesses in the substance of the brain, gastro-enteritis, &c., but which, I think, should be more properly regarded as coincidences, or complication of the primary disease, than as a part of its pathological anatomy.

The cause producing this disease seems still to form a subject for speculation, and not unfrequently for lengthened discussions. As I before remarked, I am persuaded that the disease is nothing more or less than traumatic tetanus. In support of this view we have the fact that *the wound is always present.* Next—the infant, from its great nervous development, *comparatively* much greater than that of the adult, is much more susceptible or predisposed to tetanic and other convulsive diseases.

All who are conversant with the habits and mode of life of the negro, whose offspring are more peculiarly the subjects of this disease, can readily perceive to how very many causes which are capable of producing an unhealthy condition of the umbilicus, they are exposed. As an elucidation of the cause, as well as of the fact, that the negro infant is most often the subject of this disease, I will make a few remarks upon the circumstances which generally surround it, on its being ushered into an independent existence. These remarks, however, are made with more especial reference to negroes living on large plantations. The mother generally pursues her ordinary avocation up to the hour when the warnings of nature admonish her of the near approach of the termination of pregnancy, and this, if her vocation calls her far from the quarter, (as is sometimes the case with those who are accustomed to working in the field,) does not, in some instances, allow sufficient time for her to be conveyed to her room, and occasionally parturition takes place in the field, or between there and the house. I mention this fact merely to show how ill prepared the mother is to receive and properly treat her infant—the evil is one difficult to avoid, for not knowing herself, she is not able to make her owner sensible of the period when her confinement will probably take place. When, however, her confinement takes place in the house, (the converse, of course, forming rare exceptions,) the infant is exposed, from the condition of the house itself, in many instances, to two or three causes, *each* one of which has been reckoned as *alone* sufficient to produce the disease, and which at least may assist in producing an unhealthy condition of the umbilicus. The houses are so constructed as to admit the greatest extremes of cold, and yet such as are not easily ventilated, whilst the roof and walls, and, in some instances, even the floor, are not such as will insure dry apartments during damp weather. Added to this the mother's bedding is often insufficient, and composed of such material as is not capable of keeping up a uniform temperature of body. Such exposure to the varying vicissitudes of weather, it must be apparent to all, but ill befit a young and tender being who has been accustomed, for the last nine months, to an uniform temperature of 98 degrees.

Surrounded by such circumstances the child is born. The accouchement is conducted, in a majority of instances, by a negro woman—frequently one of the daily labourers on the same farm, ignorant, of course, and often old and decrepid. This woman, who is dignified with the title of midwife, has care of the infant for the time, which she washes imperfectly, and if she has no hurtful notions of first applying irritating salves for the purpose of making the cord drop off in a short time, she proceeds to dress the navel, *in her own way—rude and awkward*, of course—applying such dressings as the mother may have provided, which are often composed of coarse and rough material. When this last office is performed, the midwife's attention to the case ceases. The mother is then left, inexperienced though she may be, *to attend herself and child.* One can well imagine what kind of attention *the child receives!* The mother, with her blunted affections and filthy habits, perhaps herself suffering from bodily malaise, is not disposed, *if indeed she is able*, to perform the most trifling service for it. The consequence is, the umbilicus receives little or no attention. In contact with the coarse and irritating cloths, often for days at a time, and the same with which it was first dressed, and they perhaps saturated with urine and other acrid secretions—the cord itself either dry and irritating, or putrid and excoriating, together with the quantities of dirt and other foreign substances which may have insinuated themselves between the dressings and the skin—the umbilicus is left to take on inflammation, ulceration, or gangrene, or to gradually enclose or envelop dirt or other foreign substances within its callous cicatrix—as the case may be.

With these powerful causes, all of which are rarely absent in any one case, and one of which *might* produce the disease, with a predisposing constitution of the atmosphere, it is wonderful to me that even a greater number of infants are not the victims of tetanus nascentium. Expose the refined and elegant white lady, with all her acute and sensitive feelings of affection for her offspring, to the same physical causes, and throw the care of her child upon her own hands amidst bodily disabilities, and we will find she will much oftener be called upon to mourn the loss of her babe from the effects of this "direful malady."

Moseley, in his work on "*Tropical Diseases*," p. 510, in alluding to the occurrence of tetanus nascentium among the negroes of the West Indies, (which has been an extensive theatre for its ravages,) remarks, "*it is most often seen where the mothers of the children are very young, or very poor, or very worthless.*" That the remote causes, inviting an unhealthy condition of the umbilicus, and favouring the development of this form of disease, may, in some instances, be so powerful as to induce tetanus nascentium, notwithstanding all proper treatment has been premised, I have no doubt; but that the number of its victims has been greatly augmented by neglect in this respect, I have just as little.

I think I am fully justified in saying, from our knowledge of their habits, that the remarks made in relation to the treatment which the umbilicus of the newly-born infant receives with the negro slaves of this country, are applicable to them *as a race*, in whatever country found. As also to the indigent portion of our own race, who are educated and accustomed to habits of indolence and filthiness, and whose offspring furnish, next to the negro, the greatest amount of subjects for this disease.

As we have seen that the *negro* infant is most frequently the subject of tetanus nascentium, so also we see the adult negro is most often the subject of traumatic tetanus—hence it has been intimated that the negro race possess, incorporated within their nature, some idiosyncrasy, which favours the development of diseases of this character. I cannot conceive of any difference in constitution which can afford a *comparative immunity* to the white race against attacks of tetanus. As we have seen the negro infant is exposed to more causes calculated to produce an unhealthy condition of the umbilicus, functional derangements, &c., so also we see (as has been remarked by others,) the adult negro is more exposed to *wounds*, which are oftener left in a neglected and unprotected state. There is no difference in their nervous development, and if there is a difference in their nervous impressibility, I cannot see why it should predominate in the negro. Subject them to the same moral and physical causes, in conjunction with the same predisponents, and I apprehend no difference will be found on the bills of mortality, from the effects of this disease upon the two races.

In some instances, tetanus nascentium supervenes when the umbilicus seems to be doing well, and not unfrequently, when the wound is partially, or even entirely cicatrized—and this by some is urged as strong grounds for the belief, that, the umbilicus exerts no agency in its production. We read in "*Evanson and Maunsell on the Diseases of Children*," p. 220, "This view" (of its probable traumatic origin) "has, however, been impugned by Dr. Labatt, who has published particulars of some post mortem examinations, in which no appearance, satisfactorily accounting for the disease, showed itself in the cord." The same grounds are taken by many others, but to my mind it is only evidence of the still greater analogy which it bears to traumatic tetanus in the adult; for, here we also see the disease supervene in many instances, when the wound appears to be doing well, and often after it has entirely healed.

Curling, in his work on "Tetanus," p. 25, remarks, "In many of the cases in the table the primary wound was *completely healed and almost forgotten*, when the symptoms of tetanus appeared."

"Mr. Morgan found on dissecting the thumb, in a case of tetanus, two pieces of splintered teak, imbedded in the radial nerve, without any appearance of inflammation in the part." (*Ibid.* p. 40.)

Dr. Rush, whose ample opportunities for observation in the Military Hospitals of the United States entitle any remark from him to the highest consideration, observed that there was "*invariably* an absence of inflammation in the wound causing the disease." *Amer. Philo. Trans.*, vol. ii.

In an article entitled "Observations on Tetanus, by M. A. McDowell, M. D., of Louisville, Ky." contained in the *New Orleans Med. and Surg. Journ.* for March 1846, the author details at length numerous cases where the wound had *completely* healed before the symptoms of tetanus were manifested; so completely was this the case and so trifling had been the wounds in the first place, that the author, in order to satisfy himself of the fact, was compelled to institute a diligent search before the cicatrix could be found, the patient not even recollecting that he ever had received a wound on any part of his body, and yet subsequent developments proved beyond a doubt that the disease was dependent upon the little inconsiderable "*cicatrix*," detected alone by the perseverance and acuteness of the physician.

In accordance with the views of the last named author, relative to the production of tetanus in the adult, I maintain that the umbilicus in the infant, may have every seeming of a healthy condition, and yet be the *punctum saliens* of tetanus nascentium. He contends, (and his position is well fortified by many stubborn and interesting facts,) that in order to the development of tetanus in the adult, "The smallest portion of any such foreign matter fixed in the substance of, or lodged in contact with these sensitive structures, may, as well as the largest, suffice to produce the malady." Particles of metal or of metallic oxides, such as film of the turned edge of a knife, a particle of oxide of iron or of lead, a briar, a splinter of wood, or a particle of glass or *sand*, &c. &c. We have seen that the mothers of those children who are most often the subjects of tetanus, are either from habit or necessity addicted to filthy habits, and pay but little attention to the state of the umbilicus in their children, leaving it pretty much to itself, in contact with dirt or any other foreign substance which may chance to lodge about it, to get well as best it may. Under such circumstances, is it not very probable that a grain of dust, or sand, or othe particle of foreign substance, however small, may be lodged in the delicat granulations of the umbilicus just after the detachment of the cord, and b included in the cicatrix, and in contact with a nervous filament, and thu become a point of irritation sufficient to produce tetanus? or, without an foreign substance being enveloped in this way, may not the cicatrix itsel include and compress within its callous substance, a nervous fibrilla, whic with the peculiar constitution of the atmosphere or presence of any o the remote causes favouring the development of that form of disease prov quite sufficient to produce it? When we know that the almost invisibl point of a needle piercing the finger, or the sting of a bee on the nose, ha given rise to the worst forms of tetanus in the adult, how inconceivabl small must be the cause which is *capable* of producing it in the newly-bor infant with all its tendencies and predispositions to diseases of that chara ter?

I think we are abundantly authorized in believing, from the evidenc before us, that the umbilicus, as indicated by its external appearance, is n always a sure index as to the agency which it may exert in the producti of tetanus nascentium; and, the supposition most reasonable and legitimat in connection with the other facts brought forward, is that, in the absence inflammation, ulceration, or gangrene in the wound, (which are perha the most frequent exciting causes,) its production is properly attributable the irritation produced by contact of some foreign substance with a nervo fibrilla, or pressure of the same in the callous cicatrix of the umbilicus.

In an article in the April No. of the *American Journ. Med. Sci.* f 1846, p. 363, on "Trismus Nascentium, by J. Marion Sims, M. D., of Mo gomery, Ala." before referred to, the author, with much earnestness a great plausibility, attributes its production to imperfect ossification of t cranial bones of the fœtus, and mechanical pressure upon the os occipit produced by decubitis on the back; the imprudent habit which some mothe have of keeping their children "for a length of time in the recumbent posture on a hard matrass, or a folded blanket with a little bit of hard old quilt, or a bunch of dirty clothes (as we often find amongst negroes) wadded up and stuck under the occiput," averring as its consequence an interruption to the flow of blood from the "medulli spinal veins," and a "congestion" and ultimate extravasation "within the dura mater of the cord."

This most ingenious hypothesis, however creditable to the author for its originality and the beauty of its conception, is supported by but few facts, which will not sustain with equal or more force very opposite conclusions. I do not intend a review of this article, but, one striking and well authenticated feature in the history of the disease occurs to my mind as being so completely irreconcilable with this view of its pathology, that I cannot forbear reference to it. It is that *the post-mortem appearances are not uniform.* Cases, very many cases have been reported, which, upon dissection, so far from revealing traces of "spinal apoplexy," or "a coagulum of blood occupying the spine in its whole length," did *not even present an increased vascularity about the parts*, the cord and membranes exhibiting *a perfectly normal appearance.*

As having some bearing upon this theory, I must make a few extracts from my case-book, relative to the case of tetanus nascentium which occurred in Judge Goldthwaite's little negro; the post-mortem appearances of which have been given at another page. The statements of the mother may be taken for what they are worth. I do not vouch for their correctness, though she seemed to be an intelligent, truth-telling negro, and as I did not question her concerning what had been the position of the child, in such a manner as to bias her answers, I take it for granted her statement was correct.

March 14*th.* * * * * "The mother states that the child had an operation at 10 o'clock last night, and at that time seemed to be doing well; at 12 o'clock (two hours after) it became very fretful and refused to nurse, and occasionally was noticed to "jerk" as if it had spasms, and continued in this situation through the night. Has passed the meconium, and its last operation was yellow; 11 o'clock A. M. The mother is lying on a *soft feather bed*, and in every way comfortably situated. When questioned relative to what position she had kept the child in since its birth, she stated that it was *her* habit to lie on her *side*, and that she kept the child *on its side facing her*, changing its position as she changed her own from side to side, but never on its back." When the dressings were removed this morning, the cord was found among them, detached. The mother does not know when the cord came off, as the midwife who attended the case did not make her appearance on yesterday morning; consequently the dressings were not removed; the cord was detached, then, some time in the last forty-eight hours. I shall not detail the symptoms present, but simply remark it was an undoubted case of tetanus nascentium, and marked by the usual symptoms. My friends, Dr. Sims and Dr. Boling, who I invited to see the case, both concurring with me in opinion that it was a genuine, well marked case of tetanus nascentium

Among other prescriptions left for the child, I directed that it should not be allowed to lie on its back, and that its position should be changed often, from side to side on a soft pillow. As regards the position of the bones of the head "they seemed to me to be about as regular and well formed as in infants generally of its age. Dr. Sims thinks the lateral edges of the occipital bone are '*slightly*' overlapped by the parietal. * * * * Dr. Boling, after carefully examining the bones of the head, and especially the occipital and parietal, remarked, that if their position was remarkable for anything, it was for its very great regularity and uniformity."

In a subsequent conversation with the mistress relative to this case, she seemed to be altogether convinced that the umbilicus had been very much neglected, and appeared quite incensed with the midwife, for what she considered a remission of duty on her part in not attending to it; and this opinion was expressed by her, before she was aware of the views which I entertain on the subject.

I have detailed the particulars of this case, because I consider the facts and statements embodied in it, if considered valid, go, as far as *one* case can go, towards disproving the *premises* relative to "position" and "occipital displacement."

I shall refrain from further comment upon these views, as I deem sufficient has been said to show their inconsistency with the true state of facts connected with the history of the disease; there are, however, other and material objections to them, which present themselves to my mind. In closing my remarks upon this article, I hope I may be allowed to say, as the talented author is a fellow-townsman, and a gentleman with whom, I am pleased to say, I am on the most amicable and friendly terms, in both a private and professional point of view, I have endeavoured, though as *briefly* as possible, to state his premises and conclusions fairly, and to treat them with that due consideration which their respectable origin demands. Regarding him as essentially discriminating, judicious and practical, and not prone to hasty conclusions, *in this* I believe him to be *in error.*

Tetanus nascentium having been made the special subject for discussio at a late meeting of the "Medico Physical Society of New Orleans," Dr Harrison, in the course of a few brief remarks, (reported in the *New Orlean Med. and Surg. Journ.* for May 1846, p. 631,) observed, "Again, we fin it scarcely existing on the main land of Iceland, but in the small island ad jacent, such has been its fatality, that not a child has been raised there These are highly valuable historic facts, which forbid the idea of its havin any connection with umbilical injury." This "small island" referred to is the island of Heimacy, on the *southern* coast of Iceland, *completely* devoi of vegetation, its surface "*entirely* covered with lava," and in the immediat neighbourhood of Mount Hecla. May not the physical face of this island the variation of temperature occasioned by a direct exposure to a southerl wind on the one side, and an extensive volcanic eruption on the other, exe a sufficiently modifying influence upon the character of the climate, t account for the greater endemial predisposition to the disease here tha on the main land? Added to this there is some difference in their habit of life as a people; this little island being entirely inhabited by fishermer who are generally poor and destitute.

The pathology of tetanus has been and is still, a subject of peculiar i terest; and yet it is one far from being settled. In order to be more forcibl impressed with the opposing theories advocated on this subject, one has b to look at the multitude of varying and incompatible modes of treatmen which at the present day claim the attention of the medical profession, rel tive to its cure.

I will not attempt a review of the several doctrines advocated on th point, but, could I venture an opinion upon a subject, the complexity an intricacy of which has eluded and bewildered the most distinguished mind I would say that much has been done to elucidate the true nature of i pathology, by the labours of *Dr. Marshall Hall.* In his work "on the nerves," he has demonstrated most conclusively, the existence of a new physiological action in the medulla oblongata and spinalis, which he terms "*the reflex function*," and which he attributes to a distinct system of nerves, denominated by him "*excito-motory*," and which "function," he thinks, presides over the "whole *tone* of the muscular system," (p. 40.) Stated in substance it is simply this: an irritation being made upon a particular nerve, is conveyed to the medulla, and from thence *reflected* through other nerves to any part of the body, however distant it may be from the nerve to which the stimulus was originally applied. This the author (Hall) thinks furnishes a clear and admirable solution to the phenomena observed in traumatic tetanus. To use his own language, which is forcible and comprehensive, would perhaps be doing greater justice both to himself and the subject. In speaking of the "excito-motory" system, p. 43, he remarks: "The influence of the stimulus is not only *reflected* upon the limbs, but it is *retrograde* in its course, passing from a nerve proceeding from the middle part of the spine *forwards* to the anterior, as well as *backwards* to the posterior extremities."

By experiments instituted upon the excito-motory system of some of the lower orders of animals,(decapitated, in order to show the independence of this action of the brain,) the author just quoted has been enabled to produce at will, simply by compressing a nerve, or irritating it in other ways, states of tonic contraction, or spasmodic rigidity of the muscular system, so intimately allied to those abnormal phenomena which are the chief characteristics of tetanus in both the adult and infant, that they cannot be rationally accounted for, except upon the same general physiological laws. These experiments not only satisfactorily explain the phenomena of tetanus, but receive themselves strong confirmation from some of its features. The clear and lucid intellect, and the absence of pain, or any unnatural or uncomfortable feeling in the brain amid the violence of tetanic convulsions demonstrate most forcibly its *ex parte* relation to the morbid action going on, except so far as it may be *occasionally* affected through its sympathetic agencies.

If the results of this author's experiments be admitted, and I believe they have met confirmation from subsequent experimenters, at least so far as the excito-motory system is concerned, his deductions seem altogether plausible, if not irresistible, and the rationale of tetanus of easy comprehension.

An individual receives a wound upon any part of the body, and, however slight, (for it has been proved by observation that an injury to the smallest nervous filament is just as apt to produce the disease as a direct injury to a large nerve,) in a few days, other circumstances favouring, tetanus is the result; the irritation at the seat of injury produced upon an excitor nerve or filament, is conveyed to the medulla oblongata and spinalis, the great center and axis of the "excito-motory" system, and from thence reflected through the motor nerves to any or every part of the muscular system, giving rise to the rigidity and spasmodic action observed in tetanus. This action is strikingly exemplified and the perversion of nervous influence beautifully displayed in both infant and adult labouring under tetanus, in taking fluid or any other substance in the mouth requiring the act of deglutition, whilst it also shows the great nervous impressibility of the system after the disease has once been established. The substance so taken in the mouth and attempted to be swallowed, frequently acts as an *irritant* to the excitors of the pharynx, which impression being conveyed by them to the great spinal axis is instantly returned by the respective motor branches for that region, causing a spasmodic closure of the pharynx and the contents to be forcibly expelled through the mouth and nostrils. The support afforded by this particular phenomenon in tetanus, to the theory of the "reflex function," does not stop here, for it must be observed that though the irritation is applied only to the larynx and conveyed to the great spinal axis by the excitor branches of the pneumogastric, it is, however, *reflected* to every part of the muscular system, however remote from the point of irritation, supplying a stimulus to abnormal action.

In order to the full comprehension of the pathology of this disease, it would seem proper to reconcile the post-mortem appearances with the rationale of the symptoms observed during life. These, as we have seen, are not always uniform, yet the spine is sufficiently often the seat of morbid lesion to justify us in looking at the changes observed there, as the true pathological anatomy of the disease, and the abnormal condition of other organs sometimes superadded, as complications to the primary disease, the effect of remedies administered during its treatment, &c. The irritation produced on an excitor nerve by puncturing, dividing, lacerating, or wounding it in any way, or compressing it by ligature or cicatrix, or by its being in contact with a particle of foreign substance, or in *whatever* manner the irritation is produced, other causes equal, gives rise to the symptoms observed in tetanus. In order to produce these phenomena, this irritation must be conveyed to the spine, thus making it the great seat and center to and from which this powerful and unnatural stimulus is conveyed. Is it not most rational to conclude that the spinal column cannot long continue to be the medium and theatre through and around which these extraordinary functional aberrations are being produced without itself becoming involved in even a greater lesion? In diseases of other organs, having their commencement merely in a failure to perform their natural and healthful function, we often witness in post-obit dissections the greatest amount of organic disease. So in tetanus, the disease is functional in its commencement, and it may be throughout its course, but as *consequences*, organic changes are dependent upon it, and these are found in the spinal column, where we would most reasonably expect to see them. The irritation producing the disease being first conveyed to the medula spinalis, causes, in unison with the well known and universally recognized axiom or law in pathology, "*ubi irritatio ibi fluxus*," a flow of blood to the medulla and its investing membranes. From the symptoms, such as coolness of the extremities, &c., it is evident there is a concentric tendency of the blood; it is most reasonable to suppose that this determination is principally to the spinal region, from the nature of the action which we presume to be going on there The vessels of the membranes of the cord continuously burdened with these undue columns of blood which are being forced through them, become weakened and inadequate to the performance of this super-amount of labour imposed upon them by morbid action, are unable to propel their contents forward. Consequently on dissection we find the vessels "*turgid with blood*," sometimes an effusion of "*reddish serum*" takes place, and occasionally the distension is so great as to *rupture* the vessels, even in the adult, and we find "*blood effused and coagulated within and around th spinal sheath.*"

I have not seen any mention made of the time of duration of the disease in those cases, in which nothing varying the natural and healthy appearance of the spine was observed, but think it probable that they were o short duration. It is a prevalent opinion, and one which I have not seen doubted, that tetanus frequently kills by asphyxia. Indeed, we know the disease does terminate, frequently in a very short time, so short as not to allow time for organic changes to be effected, and hence, we can only account for it by the arrest of some function important to life. For instance, in the case where the servant sustained a slight injury on the hand, by the breaking of a plate, and died of tetanus in a quarter of an hour after the reception of the wound, we would not have expected to have found organic changes as the result in any part of the body. The immediate cause of death in that case must have been altogether a functional one; the man died from asphyxia, or a suspension of respiration, the result of spasmodic closure of the larynx during the violence of the clonic spasms. These facts and views explain, clearly and fully to my mind, the want of uniformity in the reports which have been made upon the post-mortem appearances in this disease.

In closing my remarks upon the pathological changes, observed in the infant and adult dying from this disease, I observed that I might refer to the subject again, and endeavour to explain that which some might contend was a difference in their morbid anatomy,—extravasated blood being *more generally* found about the spine in the infant than in the adult. All can appreciate the obvious and material difference, which must necessarily exist between the texture and power of resistance in the vascular coats of the adult, and those of the infant. There is in both instances *the same flow of blood to the spinal region.* The more firm and unyielding texture of the vascular coats of the membranes, of the medulla spinalis in the adult, together with the maturely ossified and hardened case formed by the vertebræ, affords a partial immunity to these vessels against the inordinate flux of blood,—not so however in the newly-born babe,—the same morbid phenomena in this region *we would expect* to develop very different. pathological changes, differing even more widely than observation, proves to be the fact. From its greater proportionate nervous development and impressibility, it is exposed to the same, or even more intense morbid action, whilst the imperfectly organized, soft and almost gelatinous nature of its solid tissues, does not afford it that protection which more mature development gives to the adult. The vessels soon become weakened from distension, and not having that firm lateral support afforded to the adult by a more perfect ossification of the vertebræ, their own contractile powers naturally feeble, they are much easier ruptured by the columns of blood which are being forced through them, and hence "this hemorrhage of blood upon the spine," when in the adult, perhaps, there would only be a "turgid" condition of the vessels.

There is no disease common to infancy and adult age, scarcely excepting the eruptive diseases themselves, (which under like circumstances must always appear in the same garb,) when the symptoms are less modified by time of life and difference in constitution, than in tetanus nascentium and tetanus in the adult. In both, recognized by the same symptoms, they are met with alike in the same climates, in the same classes of society, prevailing too in the same seasons of the year, and governed by the same vicissitudes of weather. Added to the essential sameness of their symptomatology and history, a farther and most conclusive proof of their identity is, that the post-mortem appearances in each exhibit no discordance in morbid lesion, which cannot be harmonized by legitimate reasoning.

I shall not attempt a lengthened discussion upon the numerous modes of treatment, which have been urged in view of the cure of tetanus nascentium. In regard to this point, suffice it to say—in practice they have all been unsuccessful.—Now and then a case has been reported as cured, but so rarely has this been the case, that many would rather regard such instances as *errors in diagnosis*, than to believe the disease in any way amenable to medical treatment.

Notwithstanding I cannot doubt that cases of recovery have occurred, I am disposed to regard the *prophylactic* treatment, as almost the only one which promises a diminution in the mortality arising from it,—being far easier to avoid its dangers, than to encounter them successfully. The application of *clean, soft* and *unirritating* dressings to the umbilicus, I esteem as of the very first and highest importance. These should be removed and others applied at least *once* in the twenty-four hours, and the parts properly washed, with warm water, in order to clear away any acrid secretions which may have collected about them. This is more especially necessary after the cord has been detached. In conjunction with these, the proper hygienic rules prescribed in relation to cleanliness, ventilation and the avoidance of atmospheric vicissitudes, as applicable to protection against other diseases, are of equal value and importance here. A proper and strict observance of these rules, which are simple and within the reach of all, I cannot entertain a doubt will go very far towards curtailing the number of deaths arising from this malady.

And here I might, with propriety, close my remarks in relation to the treatment of this disease. I will, however, offer a few suggestions as to the treatment which occurs to my mind as being *most rational*, after symptoms of the disease have been developed. In accordance with the views expressed in relation to its cause, I have been led to believe that a proper local treatment of the umbilicus may be productive of beneficial results *in the commencement of the disease.* This consists in free incisions in the umbilicus, followed by the liberal application of nitrate of silver and bland poultices, or any application calculated to promote a healthy suppurative action in the wound. Not omitting at the same time the use of such remedies as may seem to be indicated to restore or correct deranged secretions, subdue spasmodic action, &c. In addition to a resort to free incisions in the wound, the use of the *actual cautery* would seem to promise farther aid in effecting the end desired, and as the case is one of extreme emergency, should perhaps be preferred before the nitrate of silver. The manner in which it is thought these means may promote favourable results, is by isolating any point of irritation by division of the nervous filament, deadening it by the application of nitrate of silver or the actual cautery, and effecting the removal of any "fixed irritant" by suppurative action. Dr. M'Dowell, of Louisville, Ky., in his article on tetanus in the *New Orleans Med. and Surg. Jour.* for March 1846, has reported several cases of traumatic tetanus in the adult, which he treated with perfect success on this plan. In some instances the relief afforded was instantaneous.

As having some connection with this part of my subject, and possessing within itself some points of interest, I have condensed the following notes from my case-book. On the estate of Mr. P. A. Wray, a wealthy planter, living within a few miles of this place, I visited, on the 12th January last, Bishop, a negro man about 26 years of age, labouring with a severe attack of traumatic tetanus. The disease was caused by an injury sustained about three weeks prior to my visit, by the bite of a hog on the lower and outer portion of the fleshy part of the *gastrocnemius* muscle of the right leg, causing a wound about an inch and a half long running parallel with the length of the leg. The man, instead of obeying his master's orders in relation to the dressing of it, filled the wound with soot and other foreign substances. When I saw the case the wound looked indolent and dry, the edges separated by a dingy, hard granular substance, resembling very much in colour and appearance, beef which has lain for several days in salt brine. On the third day after I saw him, I divided the *peroneal nerve* just where it passes by the tendon of the biceps muscle, in the popliteal region, about ten or twelve inches from the wound on the leg. The division of the nerve caused considerable pain at the moment and brought on a spasm. The case proved fatal in the end, but the patient insisted, and gave me repeated assurances of the fact as along as he continued to live, that the operation mitigated materially the præcordial pain, which previously had been continuous; he afterwards only felt it during the clonic spasms. He had felt some symptoms of the disease ten days before I saw him, such as stiffness and weariness in the muscles of the jaws, but not apprehending anything serious he failed to inform his master of it until he was found with violent clonic spasms. I therefore conclude the operation did exert a modifying influence upon the disease; but at the time of its performance the disease had become so far independent of its local origin, as to limit the beneficial results which might have followed an earlier resort to it. I also observed in this case another fact which lessens the force of some objections which have been urged to dividing the nerve between the seat of injury and the spine. Some contend, that even when the proper nerve is divided, its interlacings and connections with other nerves *beyond* the wound, are sufficient to convey the irritation to the medulla spinalis. In the case under consideration, after removing the indurated granulations, I made a free application of nitrate of silver to the wound, which caused an acute burning pain. This was done two days previous to dividing the nerve; and the caustic application was repeated several times, each time causing more pain than at the previous application. *Subsequent* to the operation the caustic produced no pain, the patient expressing himself as being scarcely conscious of its application. The patient died on the 19th. From my observations in this case, and the reports of successful cases treated in this way by others, I am induced to the belief that it will be found a valuable sanative means, *if practiced in the earliest stages of the disease*, and that the cause of its failure in many instances has been too great a delay before its performance. Three incisions *above* the wound, when the anatomical arrangements are such as to admit of it, may answer the same end, which is the only practicable mode of doing it in tetanus nascentium. From the violence and rapidity with which the disease runs its course in the infant, of course it will sooner be out of reach of this means of treatment than in the adult,—hence the propriety of even greater promptness in a resort to it.

In an article on "Mustard poultices applied extensively to the surface," in the January number of "*The Western Journ. of Med. and Surg.* for 1845," I mentioned the fact of my having enveloped an infant labouring under tetanus nascentium, in a mustard poultice, and was pleased with the palliating influence which this remedy seemed to exert. I have had but the one case of the kind since, and for particular reasons did not resort to this remedy; but from my experience with it generally, I am still disposed to think it may exert considerable influence in mitigating the violence of spasmodic action in this disease.

Through a fear of rendering this article tedious, I have curtailed, as much as possible, quotations from authors—only resorting to them so far as was deemed necessary to establish the different points in relation to the history of the disease; and, for the same reason, I have abbreviated materially my own reflections in regard to it. The subject, however, is one of considerable interest, and far from being exhausted; and one which, I am pleased to see, is attracting of late the attention of some of the most gifted members of the profession.

ART. VI.—*Cases of Epilepsy.* By H. CAMPBELL, M. D., of Uniontown, Pa. (Communicated by Prof. HORNER.)

CASE I.—On the 11th July, 1839, J. Strickler, while working in the harvest field, received a wound from a pitchfork, on the left side of the frontal bone, the prong of the fork penetrating to the depth of an inch and a half, a little in front of the coronal suture, about three inches above the zygoma. The fork struck so firmly as to require some force to extract it. The direction of the wound was obliquely from before backward, the point of the fork inclining towards the centre of the cerebrum. When I saw him two hours after the accident, there were complete paralysis of the right arm and leg, and entire loss of speech. The wound was small and closed up with coagulum. I made an incision through the scalp directly across the puncture, down to the bone to allow the escape of blood through the opening in the cranium, and put him upon strict antiphlogistic treatment. The wound healed rapidly, and in five or six months he was able to walk with crutches, and to talk so as to be understood. About this time he had an attack of epilepsy. The fits recurred at intervals of eight or ten weeks for about a year, when they increased in frequency and returned pretty regularly about every four weeks, until the spring of 1841, when I proposed to him the operation of trephining as a *possible* means of relief. After some time he consented to the operation; and in the month of May, 1841, in the presence of Drs. Fuller and A. H. Campbell, I removed a portion of the bone with the trephine, embracing the puncture in the centre of the instrument. When the circular piece embraced in the trephine was entirely separated from the surrounding bone, I could not remove it because of an attachment to the dura mater. I raised it slightly and detached the dura mater with the scalpel as close as possible to the surface of the bone. On examination after removal, it was evident that the prong of the fork in entering had produced a slight crack or fissure on the internal surface of the inner plate, from the point of entrance backwards in the direction in which the fork entered, and when the fork was extracted the edges of this fissure closed, and pinched up a portion of the dura mater, which adhered firmly in that position. How far this crack and pinching up of the dura mater extended beyond the limits of the bone removed by the trephine we could not tell, but it was visible at the inner edge of the opening. The fits gradually diminished in frequency for about a year, when they ceased altogether, and from that time to the present (July, 1846), he has had no return, and he has recovered almost perfectly his speech and the use of his arm and leg.

Case II.—The following curious case came under my observation. S. W. had been afflicted for many years with that form of epilepsy which makes its attacks in its early stages during sleep. The fits at first occurred only after long intervals, and did not interfere with his regular attention to his business of a tanner. Gradually they became more frequent, and would seize him at all hours of the day, frequently as he walked along the street, with all the violent spasm of the worst forms of the disease. He became dull, and totally unfit for business, with a downcast and almost idiotic look.

Some three years ago a mesmeric lecturer visited our town, and W. became strongly impressed with the belief that if he were mesmerized, it would cure him. He consulted me, and simply to gratify him, I approved his determination to make trial of it. A time was appointed, and he invited me to be present. I would remark here that for three or four days, W. was under a high degree of mental excitement, produced by the hope and even firm belief that mesmerism would cure him. His step was light, quick and elastic, his countenance bright, and face slightly flushed. He walked rapidly, indeed almost ran whenever he moved. His eye sparkled, and the vacant stare was entirely changed for the look of intelligence. He constantly attended the mesmeric lectures, and took great interest in all the experiments exhibited. At the time fixed for operating, by putting him in the mesmeric sleep, I attended, but all the efforts of the mesmerizer were ineffectual except to increase his excitement. After an hour or more the experiment was discontinued, with the common excuse that "he was not a suitable subject." But a young man for his own amusement took W. into a private room, telling him that he could mesmerize him. Here he became so much excited, that the young man was frightened and left him. He was taken home and continued in that state all night. Next day I was requested to visit him. I found him somewhat calm, and lying quietly on his back in bed. On my asking him what was the matter, he told me to sit down and I would see. He began to explain to me that his legs, arms and body were drawn violently, but without pain in every direction, without his being able to control or prevent it, although perfectly conscious. Presently he observed, "Now it's coming on," and almost immediately his legs and body were violently thrown up until he stood nearly on his head. When his body and limbs came down, he appeared to be thrown convulsively to the opposite side of the bed—then back again. After a minute or two he settled down quietly, observing, "Now it's all over for a while." I asked him if he could not keep still by holding to the bed. He answered that he had tried but could not. When he gave me notice of the approach of the next spasm, I told him to hold fast with his hands and resist with all his might, while I held one arm, and his brother held his feet. "It's coming," said he, "I can't help it," and presently he threw us both off like children, and after a few gyrations in the bed, again settled down. During this period his pulse was slightly accelerated, his countenance was calm and his conversation rational. His tongue was furred, and his bowels had not been acted on for three days. I ordered him a large dose of cal. and jalap, and 10 gr. of assafetida every four hours.

After the operation of the purge and the continuance of the assafœtida for forty-eight hours, he was well, and has been free from fits ever since, now more than three years—is an active business man, and has the countenance of intelligence and health.

What was the cause of his fits, and how was he cured?

I offer the following suggestion by way of explanation. From some unknown cause the circulation through the brain, if not obstructed had become generally sluggish, and being still more retarded during sleep, brought on that state of syncope which frequently precedes actual convulsions. This functional derangement and torpor of the brain continuing and increasing, brought on the frequent and violent fits and almost idiocy. Still there was no organic lesion, and when the mind was roused and highly excited with the confident hope of cure by mesmerism, the natural circulation was restored and for a short time carried beyond the healthy standard, producing those uncontrollable muscular spasms. Finally it settled down to the proper healthy condition, and the fits ceased to recur. The tone of the brain has since been preserved by action and attention to business. Mesmerism derives no support from this case.

Art. VII.—*Obstetrical Cases.*—By William M. Hudson, M. D., of Chester, Meigs Co., Ohio.

Dr. I. Hays.—Sir: In the course of a somewhat extended medical and surgical practice of upwards of thirty years, it has been my fortune to meet with a number of unusual cases. I take the liberty of troubling you with the description of one or two cases that have occurred to me in my obstetric practice, and which were to me quite interesting at the time of their occurrence. I shall merely state facts without further remarks, all of which you are at liberty to make just such disposition as your good judgment may direct.

Case I. *Labour, prolapsus of the bladder.*—May 28th, 1825, was called in great haste to attend a lady (Mrs. T——n), a few miles in the country (I was then residing in Freeport, Harrison Co., O.,) who was then in her ninth, and I believe her last labour. I found the case making good progress, pains frequent and in full force; the liquor amnii had been spontaneously evacuated just before my arrival; but proceeding immediately to my duty, I discovered a membranous tumour outside of the vulva, containing, I should judge, four or five ounces of a very limpid fluid. At first, I supposed it to be a sacculated portion of the amnion, containing its peculiar liquor, but upon a more careful investigation, found it to be the fundus of the protruded urinary bladder partially filled with urine; it had found its way through a laceration in the anterior part of the vagina, and thus was quite external to the labia majora. I confess I was somewhat alarmed, and used the utmost caution as the labour advanced, to prevent any unnecessary injury of the protruded bladder. Other than this accident, the labour terminated naturally and in reasonable time. Immediately after delivery I proceeded carefully to return the urinary cyst, with its contents, through the vaginal fissure (which was longitudinal, and I suppose extended nearly two-thirds the length of the vagina), to its natural situation. This I accomplished without any difficulty, and it seemed to retain its situation as readily as a button on its proper side of the button hole. The contents of the bladder were evacuated about two and a half hours after the lady was put to bed. When she was thus comfortably situated, (as I then supposed,) I gave her the first intimation of what I deemed her critical situation, but I found it was no new piece of intelligence to her. She informed me that this was the eighth successive labour in which the same accident had occurred, and which she attributed (with how much reason I cannot say), to mismanagement, and the "rough handling" of the practitioner who attended her in her first confinement. She apprehended no unpleasant consequences, having never experienced any excepting during parturition, and the rapidity of her puerperal convalescence, together with subsequent ability to perform all, and more than the usual duties of women of large families, in a new country, proved the justness of her expectations.

Case II. *Labour—separation of bones of pelvis.* July 19th, 1836, was called on to attend Mrs. M——e, a woman of small stature, in her fifth accouchement. From her peculiar appearance one might suppose a plurality of fœtuses or an unusual quantity of the liquor amnii; neither however proved to be the case, though the former was intimated by some of the attendants, but the result was a single child of large size, if I recollect right, of ten or eleven pounds, with a well ossified cranium, born in a state of asphyxia, from which it was soon resuscitated, and did well. The membranes protruded and were ruptured, and the cervix uteri completely dilated before the engagement of the head, which presented with the occiput towards the left acetabulum of the mother. The pains had been severe for several hours previous to the evacuation of the liquor amnii, and shortly after, that occurrence came on with redoubled violence, during one of the most forcible of which a sudden report was heard (proceeding manifestly from the pubic region of the mother), which almost started me from my seat. Some of the ladies present said it was as "loud as a pistol," though it had not a similar sound. The labour however progressed and was terminated in about an hour after this accident, but not without great suffering to the patient in the pubic and sacro-iliac regions, aside from the pains of expulsion, and which distress did not subside when the delivery was completed, and it was found that she was utterly unable to stand or to use the inferior extremities. Upon examination (a painful one, to be sure) the ossa pubes were found to move readily upon each other, and there was a general mobility of the bones of the pelvis, as well at the sacro-iliac junctions as at the symphysis pubis. I had her placed carefully in bed upon her *back*, in which position she generally lay for a number of weeks, for she could not turn upon her side without assistance. I had a roller about four inches wide and six or eight yards in length, passed round the pelvis, well secured and re-applied as often as it became loose or displaced. Pursued an antiphlogistic course to prevent inflammation, which however did supervene to such an extent as to render catheterisms necessary. With such a course of treatment she was able to walk a little in the course of six or seven weeks, (the pelvis being *well* bandaged,) but generally kept her bed for nearly three months (doing such light work as knitting, &c.), and found the pelvis strengthened by wearing the bandage, (which she learned very well to apply herself,) for a much longer time. Eventually the pelvic junctions obtained nearly their former strength; at any rate I attended her in her next confinement, about two years afterwards, viz., on the 17th July, 1838, at which time she had comparatively an easy parturient season, being delivered of a child of about seven and a half or eight pounds, and from which accouchement she had a very rapid convalescence.

Art. VIII.—*Cases illustrating the use of Sanicula Marilandica in Chorea.*

By J. B. Zabriskii, M. D., Physician to the King's Co. Almshouse.

The publication of the following cases of chorea, which were treated successfully by the use of the Sanicula Marilandica, may lead to the trial of the virtues of this plant on a more extensive scale by other practitioners. The Sanicula Marilandica is an umbelliferous plant growing in marshes, or low and shaded ground, from two to three feet in height, and has its gashed, oblong and digitate leaves growing around the stalk; the fertile flowers are sessile, subternate, the others are barren, pedicelled and most numerous. The root is fibrous, aromatic, and possesses the active matter of the plant. Diluted alcohol extracts the active principle in some degree, but the best form of administering it is in the powder of the dried root. It is highly tonic, and is used in popular practice as a favourite remedy in intermittent fever.

Case I. C. V. S., a girl of eight years of age, of fair skin, light hair and eyes, lively disposition, was attacked in May, 1837, with involuntary movements of different parts of her body. Her hands were constantly in motion; she had twitchings of the face, spasmodic winking of the eyes, and agitation of the whole of her body. All these symptoms gradually increased; her walk became very awkward; the spasmodic twitchings of the muscles of the face increased in violence and frequency; the motions of her hands were irregular and appeared to be involuntary, and her whole frame was greatly agitated. The spasmodic action was greatest in the arm and leg of the left side, although it extended to the right. As she was pale, lifeless, with tumid abdomen and constipated bowels, I suspected the irritation of worms, and administered some brisk cathartics, followed by anthelmintics, but without effect. These were followed by tonics and antispasmodics, but she still grew worse. The root of the cimicifuga racemosa was then given as recommended by Dr. Young in the ninth volume of this journal, but this was also inert. I then determined to try the effect of the sanicula, which is extensively used in popular practice under the name of black snake-root. Having procured a quantity of this, it was administered in doses of half a drachm of the powdered root three times a day mixed with water. The effect was well marked; the progress of the disease was at once arrested, although she had been getting worse until this day. In three days a very sensible improvement was perceived and in two weeks the disease was entirely removed.

Case II. E. B., aged ten, of delicate frame and sanguineo-nervous temperament, was afflicted with the symptoms of this distressing disease in the autumn of 1837. After using cathartics, opiates and tonics without success, she was put upon the use of the sanicula. Not having any of the root dried, some of the fresh root was made into a syrup by boiling in water. Under the use of this, the increase of the disease was checked, but she did not improve. After using this preparation for a week without any satisfactory benefit, the powdered root was given with immediate effect. She improved from that time, and in a short period was entirely cured. This shows that boiling water does not extract the greater part of the active principle of this plant though it may dissolve a small portion, as the syrup checked the onward progress of the disease and made it stationary, but did not relieve, while the effect from the powdered root was immediate. The active principle appears to reside in an essential oil, which was probably dissipated by the heat of the boiling water.

Case III. M. B., aged sixteen, of dark complexion, hair and eyes, very lively in disposition and constantly cheerful, who had previously enjoyed good health, felt in March, 1840, some of the symptoms of chorea, which she found to be gradually increasing. She had spasmodic motions of the face and eyes, a great disposition to involuntary motions of the hands, although she could control them by making a strong effort of the will; her mind was easily excited, irritable, and nervous; she was very restless and in constant agitation. The menses were not disturbed. After a brisk cathartic she was put at once upon pulv. rad. saniculæ, which immediately prevented all further progress, and in a short time effected a cure. This was evidently a case of chorea in its incipient stages, and was arrested by a timely application of the sanicula.

Case IV.—M. S., aged eleven, had for nearly a year been subject to a severe attack of chorea. The spasmodic actions were very severe and constant, jerking of the hands very great, frequently so much so as to prevent her from putting a cup to her mouth; at times the convulsive actions of her limbs were so great that she could not walk, at other times she would be better, the symptoms remitting in violence. She had been subjected to a great variety of treatment by her family physician and several other distinguished medical gentlemen; all the most powerful means which are commonly used in this disease had been tried in vain. Being consulted in this case I gave her a quantity of the pulv. saniculæ to be administered in doses of a teaspoonful three times a day. This produced almost immediate relief, and in a short time caused all the most severe symptoms to disappear.

Some remains of this disease continued, however, for a time, although the severity was subdued, which were however gradually dissipated under a tonic plan of treatment.

Flatbush, *July 25th*, 1846.

Art. IX.—*Intestinal Obstruction from novel causes.*—By J. F. Peebles, M. D., Petersburg, Va.

Case I. Mrs. Hanbury, the wife of a small shopkeeper, having died under circumstances originating a suspicion of poison, I was requested by the coroner to make a post-mortem examination of her case. The history of her illness, so far as I could learn, was as follows. Soon after an altercation with her husband, during which a struggle ensued, and she was known to have used the most violent exertion, she complained of pain in the pelvic region, which increased and continued during the whole of her sickness. Her disease was most accurately diagnosed by the attending physician, Dr. Cox of this town,—who saw her perhaps the day succeeding her attack—as acute enteritis.

The most judicious and active treatment was employed, as local and general depletion, &c., without relief, and she sunk on the fourth or fifth day with many of the symptoms of strangulated hernia. The deceased was a finely-formed athletic woman, apparently about thirty years old. She had borne several children, and at the time of her death was but two months out of a confinement. On exposing the abdominal cavity, a quantity of pus mixed with flaky serum, was observed, floating among the intestines. Everywhere were seen traces of the highest degree of inflammatory action. The attempt, in carrying on the examination, to raise the small intestine, disclosed that it was firmly adherent, low down in the pelvis; and a further exposition of this cavity at once fully brought to light the true cause of all the mischief. The uterus, somewhat larger than natural, and firmly attached in its location, was seen protruding across the superior strait, to within ar inch of the promontory of the sacrum; and between its fundus and tha process two portions of the small intestine, the one entering into, and th other returning from the pelvic cavity were firmly held, thereby inducing a complete obstruction of the canal. The greater extent of the congestion at this point, clearly indicated it as the focus of all the inflammatory action; adhesive inflammation had enveloped the intestines with plastic matter, firmly uniting the ascending and descending portions to each other. Though small, this aperture, through which a fold of the intestine had been forced, was not of itself sufficient evidently to bring on such complete strangulation, and to fix the parts, although neither adherent to the sacrum nor fundus uteri, so firmly in their location; there was obviously space enough to allow the free passage of a fold of empty intestine; the cause of this result, however, became very evident upon a dislodgment of the mass, a process which it required some force to effect. For that part of the intestine below the constricted portion, and where it was folded upon itself being free, had become disturbed partly by effusion into the canal, presenting a sac or pouch firm to the touch, and of a size amply sufficient to present a physical obstacle to the return of the gut to its natural position, thus at once accounting for the very firm manner with which the knuckle was held in situ.

Besides serum tinged with the excrement, this pouch or sac was found upon examination to contain several pieces of hardened feces. As before remarked, the two portions of the intestine were greatly congested, and after their removal from the body it was found that they had become firmly adherent for the space of three inches.

The phenomena attendant upon the history of this case admit of easy solution. It is plain that, during the struggle before mentioned, which this woman had with her husband, this knuckle or fold of small intestine was forced into its novel location. Retained there, owing to partial constriction, the sac or enlargement, ultimately preventing the return of the fold to its natural position, and which therefore rendered the result so serious, was then almost immediately formed, simply by the natural gravitation of the contents of both the ascending and descending portions of the canal, to this most pendent point; and finally the adhesion of the walls of the intestine was a most beautiful natural process, it being a step preparatory towards overcoming this obstruction in the digestive canal, by opening a communication between its two sides above the stricture.

Case II.—The subject of this case was a negro boy, apparently thirteen or fourteen years of age, who, about a week before his death, was seized with an anginose affection, prevalent at that time, accompanied with some threatening head symptoms. He was visited by Dr. White, who treated the case actively by emetics, purgatives and local depletion. On the fourth day the symptoms all gave way; appetite returned; the boy was cheerful and free from fever, and Dr. W., having no hesitation in pronouncing him convalescent, therefore dismissed the case. A few hours afterwards, however, the patient was seized with severe tormina, followed by a return of fever and great tenderness over the umbilical region. Despite the most udicious and active treatment, tympanitis came on, and the case immediately assumed the gravest possible aspect. Thirty-six hours after the relapse I saw the patient in consultation. He was then dying with the symptoms of acute enteric inflammation, and survived but a few hours.

The sudden apparent translation of the disease, in this case, from the head to the bowels, and the rapid and altogether uncontrollable nature of he latter affection, led us to feel some curiosity in regard to it, and an examination was made after death. The abdomen was excessively tympanitic, and its cavity when exposed was filled with serum tinged with pus. The intestines and their appendages were found deeply injected. The starting point of the inflammatory action was easily traced to the cæcum, near its beginning, where, upon a closer examination, a very curious malformation was discovered, which it cannot be doubted led to the fatal result. It was this: one of the sacs of the cæcum, created by the longitudinal and transverse bands, instead of presenting outwardly, was formed inside the intestinal cavity, creating a deep concave surface externally and a convex one internally. Looking at the intestine a deep pit was observed partially closed in by the two lateral or transverse bands, marking the spot outside where the deformity existed.

This malformed sac had become incarcerated completely by the firm bands bounding its four sides, and thus strictured it was blackened and sphacelated, and so much thickened as almost entirely to plug up the bowel. Some idea may be formed of the extent of this thickening, when it is asserted that after a removal of the diseased part from the body it was found impossible to push it outwardly through the constricting bands, so as to make it assume a natural position. Nothing can be easier than the explanation thus afforded to the phenomena attendant upon this case,—the sudden intervention of new and altogether different symptoms after the complete subsidence of those which were first presented. This malposed sac, as we have seen, ordinarily created a partial obstruction in the cæcal canal, and therefore was peculiarly obnoxious to disease. It cannot be doubted that the purgatives which were used had irritated this projecting surface; and irritation, once set up in such a part, it is obvious could not occur without the most serious consequences, since its slightest enlargement tended to a strangulation, by the bounding firm bands of the whole sac; which, when once strangulated, as the enlargement consequent upon that result directly tended to increase the constriction, could only progress to sloughing and, through it, to a fatal result.

ART. X.—*Case of Varicose Aneurism, successfully treated by Pressure.*

By WM. JOHNSTON, M. D., of White-house, N. J.

JACOB APGAR, a blacksmith aged 78, consulted me on the 4th of March last on account of an injury received in blood-letting about four weeks previously. Upon uncovering his arm I discovered an aneurismal varix about the size of a walnut, produced by a wound of the brachial artery. Its pulsation was synchronous with the artery at the wrist. There had been very extensive effusion of blood in the cellular membrane for several inches, both up and down the arm; but this had disappeared after a few days, and at the time I now examined the arm there was no discoloration of the tumour, which presented a slight irregularity over its surface. Its pulsations were so strong as to raise the fingers with a bound, when pressed firmly upon it; indeed, the artery at the wrist pulsated with unusual force. The impulse of arterial blood into the aneurismal sac immediately under the cicatrice in the vein was very striking, and left no manner of doubt as to the real nature of the case. He complained of no pain upon handling the tumour. His general health was good, though his habits had been rather intemperate. He stated to me that there had been some difficulty in stopping the bleeding, and that when his attention was first directed to the tumour it was about the size of a hazelnut.

I was much struck in reading the relation of several cases of spontaneous aneurism successfully treated by pressure, and resolved to give the plan a trial. I had an arched tourniquet constructed so as to touch the arm, only at two opposite points. It was made of steel. At one end there were a couple of holes for screwing on a piece of board of three or four inches in diameter, which was well padded, and at the other end a long screw, which was attached to a similar board, on the back of which was a female screw. The boards were suited to the convexity of the arm. The apparatus was placed upon the most convenient part of the humerus to command the artery. By means of the screw I could regulate the pressure upon the artery so as instantly to stop the circulation in it, or merely weaken its force. The first application of the instrument, which was continued less than two hours, completely destroyed the *aneurismal bruit;* I could not detect it afterwards. The circulation through the artery was completely interrupted about one-third of the time in which the instrument was applied. *My principal object, however, was merely to weaken greatly the force of the circulation in the artery of the arm, and thus to produce a state favourable to the coagulation of blood in the aneurismal tumour, and consequent deposition of fibrine.* The instrument was applied again on the next day for the space of less than two hours. Upon the following morning I found that all pulsation had ceased in the tumour, and the most careful examination could detect it in no part thereof. It never returned. The instrument was applied on the six following days and on every alternate day until the 23d of the month, when it was laid aside, and the patient advised to keep his arm at rest in a sling. The tumour became harder; almost of a cartilaginous feel, but slowly decreased in size, and at the time of writing this, June 26, (3 mo. 22 days,) is about as large as a split pea, and in all probability at the end of a few months more there will be no vestige of disease remaining. He has the free and perfect use of his arm. The instrument was not left on the arm after the first two applications longer than one hour at a time, and in reflecting upon the case I am satisfied that it would have terminated favourably had the instrument been applied but twice. Coaguation of blood in the sac, and deposition of fibrine and interruption to the ngress of arterial blood were in all probability effected, and nothing was wanting but patience to wait the progress of absorption.

ART. XI.—*Wound of Abdomen, Expulsion of Intestines, and Cure.* By J. GIBBS, M. D., Claiborne, La.

A LABOURER, 25 years of age, in a rencounter, on 9th Feb. 1846, received, with a dirk knife, a cut commencing opposite and two inches to the right of the navel, extending outwards and upwards, to the length of one inch and a half. The struggle did not cease until the jejunum, ileum and colon, ogether with the omentum, were expelled with serious lacerations to the atter. An incision of half an inch through the peritoneal coat of the small ntestine was the only observable injury to the gut.

Two or three hours had elapsed before medical aid could be obtained, nd now the patient lay prostrate and exhausted. The skin cold and moist, pulse feeble, nausea and ineffectual efforts to vomit, on the least motion. The gut was quite cold to the hand, and the large portion had assumed a dark purplish hue, and was badly swollen.

Two small mangled portions of epiploon were removed with the scalpel; then by patient manipulation, the small gut was returned, securing it with the ulnar fingers of the left, pressing inwards with the thumb and index of the same, assisted by the right hand and thus staying it, whilst the first hold was being renewed.

The strangulation and tenderness of the colon required the incision to be enlarged some five or six lines before its reduction.

During the reduction, hemorrhage was profuse, and the patient suffered intensely, yet as no artery was discoverable, and the parts being brought in apposition, the interrupted suture, including seven or eight lines on either side, and the entire abdominal wall, save the peritoneum, with a pledget of lint, straps of plaster and bandage completed the dressing.

Quietude, horizontal position and farinaceous diet, being strictly enjoined, together with directions for giving an occasional anodyne and the mildest aperients, the patient was left quite disposed to sleep.

On the 11th the patient had lost blood occasionally for the first twenty-four hours, from the wound, on turning or exerting the abdominal muscles. Stools small and in slugs. Had slept. Skin and appetite improved. Pulse 74 and full.

Vs. to extent of ℥xxv.—(pulse rose to 100;) hydrarg. chlo. m. gr. iij, and repeated, constituted additional treatment.

On 25th, patient walking about, without having had scarcely an unfavourable symptom. The sutures, which now formed the only apparent injury, were removed and patient discharged.

In the above case, we have additional evidence of the passiveness of the stomach in vomiting, and the fallacy of dispensing with sutures in similar cases.

It should be remarked that the sutures used were large, and barely brought the lips in contact, allowing liberally for swelling and the exit o blood, and that, instead of aggravating, they appeared to perform the offic of a salutary revulsive, obviating the wonted tumefaction in the lips of th wound, and the irritation, in the adjacent peritoneum, consequent on so muc handling.

ART. XII.—*Case of Death from Inhaling Chemical Fumes in a Su phuric Acid Chamber.* By EDWARD A. MANS, M. D., of Baltimore, M

RICHARD FORD, negro, æt. 34, of good muscular development, healt constitution and temperate habits, was at work, about two hours at noon, Saturday, 2d inst., in a sulphuric acid chamber, at Chappell's factor There was probably a large amount of nitrous acid gas in the chambe While breathing it he did not complain of any ill effect, and neglected to to the door for purer air, as often as his fellow-workmen, who were occ pied in the chamber with him. In the evening he complained of feeli unwell, and had proceeded some twenty yards from home, on a visit his mother, about 10 o'clock, P. M., when he experienced vertigo and fell down. He was next affected with nausea, great prostration, and diaphoresis. I was sent for shortly afterwards, and found the patient in bed, with an air of sufferance, distortion of countenance, petulance of temper, jactitation; no disturbance of mind; power of deglutition perfect; tongue natural; irritation of the trachea, with a hacking cough and inclination to expectorate; dyspnœa; extensive mucous rale of both lungs; præcordial oppression; pulse full and bounding; no pain upon pressure over the stomach, nor any symptoms whatever of abdominal distress; temperature of the surface moderate; diaphoresis.

Treatment.—Venesect. ad ℥xii; epispastic to the chest; diluent drinks; slight alcoholic stimulus and a mixture of syrup. Tolu. et scillæ. c. gum ammoniæ.

The patient expressed himself better, and I left him, as I thought, much relieved. I received an urgent message, at 5½ A. M., to visit him, and upon arriving, was informed by his wife that he had remained comfortable until 4 o'clock, when a most decided change for the worse took place; that his mind then wandered, that he became exceedingly stupid, and indisposed to reply to any question that was put to him. The aspect of the case, at this time, was truly ominous of the result. The eyes were closed and dull, pupils contracted, although somewhat sensible to light; consciousness nearly extinct; he could be aroused to take drink, and would mutter words altogether unintelligible; temperature equable, skin perspiratory, pulse but little affected. At 7 o'clock he died. An *autopsy* was made at 4½ P. M., ten hours after death. Present Drs. Mans, Fonerdon, Theobald, W. H. Davis, C. Johnston and C. Frick. Dissection by Dr. Frick. Report by Dr. Johnston. The post-mortem appearances were as follows:—The mucous membrane of the pharynx and œsophagus normal; that lining the trachea, however, from the epiglottis downward and also through the bronchial divisions, slightly injected. The left bronchus much less injected than the other. The lungs, on opening the chest, did not collapse, and were greatly distended. There were ancient adhesions in several places to the parietes of the thorax, and the right lung was particularly attached. Upon being cut into, a great quantity of frothy serum exuded from the bronchial branches; clotted blood was readily pressed from the vessels; they appeared firmer than natural, and a feeling of elastic resistance was universal. Their colour was purplish, and although very slightly crepitant, they still floated in water. The mucous membrane of the trachea, where most injected, was raised in small strips only. The *pericardium* contained an ounce of fluid. *Heart* large, but in proportion to the great muscular development of the subject. Its *cavities* and *veins*, the *cavæ*, *aorta* and *veins* of the *neck*, more or less distended with black clotted blood; valves normal. *Liver* of a very dark hue, but otherwise healthy. *Stomach.* Mucous membrane thickened, softened, and of a notable red colour. The cardiac portion especially very much congested in patches, interspersed with numerous bright red spots. The veins of the great *omentum* much distended with clotted blood. In the *small intestines*, the patches of Peyer and isolated follicles generally evident, but not reddened; occasional *plaques* of arborescent injection were discovered, but were not peculiar to any portion of the mucous membrane. A moderate quantity of citrine-coloured fecal matter in the tract of the lower small intestine.

There was some diversity of opinion as to the manner in which the deleterious effect of the gas proved fatal. Some referring it to the pulmonic lesions, and through them to the injurious action of an imperfectly aërated blood upon the cerebral mass, while another was disposed to think that a chemical theory could most satisfactorily explain the result, viz. the absorption of the gas through the cutaneous capillaries, the consequent changes wrought in the blood, and the noxious effects which such a change mus of necessity produce. The intensity of the gastritis attracted the attention of all present, and was not satisfactorily accounted for by any of the known causes of that disease. Its presence seems to have been noted in the few cases reported upon this subject, and was adduced as an argument particularly substantiating the chemical hypothesis to which I have referred This autopsy throughout was deeply absorbing, not merely from its novelty but from the beautiful exhibition of post-mortem phenomena with which it presented us.

Art. XIII.—*On a Remedy (the Ambrosia Trifida) for Mercurial Salivation.* By Wm. Robertson, M. D., of Harrodsburg, Ky.

One of the most common plants on our farms possesses, as I have discovered, more prompt and efficacious remedial powers in the cure of mercurial salivation than any article I have ever seen tried for that loathsom disease. During a practice of forty years I have seen the disease in a its forms, and various remedies employed for it, but do not recollect to hav ever witnessed an obvious curative influence exercised by any of them.

The remedy I have lately adopted, in every case in which I have trie it, has proved a speedy and effective cure, relieving the patients i from six to eight hours of all the most distressing symptoms, and withi twenty-four or forty-eight hours, removing every symptom of salivation However, I would observe, that all these cases have been of a mild characte or in the incipient stages. What influence this remedy would exert i those violent cases of the disease, occasionally met with in practice, attende with extensive swelling, ulceration, sloughing, and falling out of the teeth I am unable to say, having met with no such case since my adoption of th article, but I think it probable that such a case would call for the use of other remedies. Nevertheless the use of this remedy in the commencement of such cases, would very probably arrest their progress and prevent their attaining an aggravated form. In this view I am sustained by the result of a case that came under my notice within the last month. In this case the power and influence of this medicine to control mercurial salivation, were most strikingly exemplified. It was that of a female, aged thirty-five, in the eighth month of her pregnancy, of delicate frame and phlegmatic temperament and predisposed to hysteria. She was advised, for habitual costiveness and torpid liver, to take one or two doses of calomel, milder purgatives having procured only momentary relief. The calomel was retained about thirty hours, although followed by a large dose of castor oil in ten or twelve hours. The consequence was, a violent attack of mercurial salivation. Within twenty-four hours from the attack, some unusual symptoms having manifested themselves, the family became alarmed, and I was hastily called to visit her five miles in the country. The bowels having been evacuated by injections, I found the patient without fever, and only complaining of the salivation. The gums and mucous membrane of the mouth were inflamed, a little swelled, and had a soft puffy appearance; the whole surface was coated with thick viscid mucus, adhering with unusual firmness, and so offensive in smell and taste to the patient, that every effort to discharge it was attended with nausea and vomiting; a putrid effluvium was exhaled with every breath, along with the mercurial fetor, perceptible and offensive to the bystanders. It was this symptom that had alarmed the family; they concluded that mortification had already taken place. All perception of taste had ceased, and food and drinks were rejected with disgust. The putrid smell, perceptible in the breath, evidently proceeded from the viscid mucus adhering to the mouth and throat, acquiring a putrescent tendency from being detained there long after the secretion was thrown out from the secreting glands, &c. This was proved by an examination of the secretion; when discharged (as it was with great effort) into some vessel, the same putrid smell was present, and the mucus was about the consistence of the white of an egg.

This case of pure mercurial salivation—I say pure, because this disease is very generally accompanied by other diseased conditions of the system—afforded me the best opportunity I had seen of testing the powers of the remedy. I immediately procured from an adjoining field, a large handful of the green leaves; poured on them in a suitable vessel one quart of boiling water: as soon as it was cooled sufficiently, the patient was directed to wash the mouth and throat freely every half hour; nothing else was used except the common soda powders; they were given every three hours in an effervescing state.

I remained with the patient six hours. By that time the mouth and throat were cleared of the thick viscid mucus; the nausea and vomiting had ceased entirely; the natural taste was nearly restored; the patient felt greatly relieved, and partook of some light food with relish. The next day she was still improving and comfortable, and on the third day, within forty-eight hours from the time of commencing the use of the remedy, every symptom of salivation was removed, and the female was engaged in her usual domestic avocations.

I will give another case which occurred within the last two weeks, because there is a fact connected with it, giving rise to an opinion that the remedy may prove beneficial to inflammation in mucous membranes, arising from other causes than mercury. A gentleman, from bathing in a river, took cold. He called on me, complaining of headache, sore throat, a stiff neck. He was bled; some active cathartic pills, containing a small quantity of calomel, were given, with directions to use them so as to keep the bowels in a solvent condition; to use a light diet, and apply vol. liniment to the throat. Three days afterwards he called on me to inform me that the pills, as used, had not been active enough, and that he was salivated; the sore throat still continued without abatement.

I gave him a handful of the fresh leaves, and directed him how to use the infusion. He afterwards informed me that twenty-four hours' use of the remedy removed every symptom of salivation, and that the sore throat had also been cured. He further informed me that at the time he received the remedy, he felt so badly about the mouth and throat, that he did not expect he would be able to preach for a week, (he is a minister of the Gospel,) but that after using the remedy he found himself as able to preach at the end of two days as ever he had felt in his life.

May not this remedy prove beneficial as a local application in leucorrhœa, prolapsus uteri, and gonorrhœa, also in various affections of the throat? I shall certainly in future extend its use to diseases of this character, and I hope that practitioners of medicine, especially those residing in districts where the plant abounds, may be induced to give it a trial, and report to the profession the result of their practice.

This plant is found in all parts of Kentucky, and is known to all our farmers under the popular names of horseweed, richweed, horsemint, and horsecane, but is an entirely different plant from that described in the appendix to the fourth edition of *Wood and Bache's Dispensatory*, at page 1137, under the title of *Collinsonia Canadensis*, and vulgarly known by names similar to those applied to the Kentucky plant.

I was induced to make a trial of this plant in mercurial salivation, from the fact that this plant, when given to a horse affected with a disease called slabbering, effects a complete cure of the disease in a few hours.

This salivation or slabbering disease in the horse, doubtless proceeds from some diseased condition of the salivary glands. About two years ago passing a field where the plant was abundant, its effect on the salivated horse occurred to my mind, and immediately a question suggested itself—that i this remedy can exert so speedy and such surprising effects on the salivary glands of the horse, may it not possess properties that would render it useful and beneficial in salivation in the human subject? Under this impression I resolved on a trial of its powers in the first case that should present itself. The trial convinced me that it possessed powers for relieving and curing mercurial salivation, greatly surpassing any means I had hitherto used, and subsequent experience has firmly established that conviction.

The effects produced by the local application of the infusion, in the human subject, induces me to think that the effect it produces on the horse, does not arise from the plant taken into the stomach, and reaching the diseased glands through the medium of the circulation, but that the direct application of the juice of the plant while the horse is chewing it, effects the cure. It has so happened that all the cases in which I have had occasion to use the remedy, have occurred during the spring, summer, or fall, when the plants are in a green state. I have the dried leaves, but have never used them; whether the leaves lose any of their virtues by drying, I am unable to say. I have never heard of the plant being used in any shape as a medicine until I tried it as a remedy for salivation.

[Dr. Robertson was polite enough to send us, with the above communication, some dried specimens of the above plant, which we submitted to our friend Dr. R. E. Griffith, an able botanist, from whom we have received the following note.

Dr. Hays.—Dear Sir. The plant you left with me appears to be *Ambrosia Trifida*, though from the absence of flowers or fruit, it is difficult to decide with absolute certainty; at the same time the characters of the leaves and stem are so striking as to leave little doubt on the subject.

Torrey and Gray (*Flor. Nor. Amer.*, ii. 290) describe it as follows: "Stem tall and stout, hairy, rough; leaves scabrous and hairy, deeply three-lobed; the lobes oval, lanceolate, acuminate, serrate; the lower leaves often five-lobed; petioles narrowly winged, ciliate, racemes often paniculate; fruit (fertile involucre) turbinate-obovoid, with a short conical pointed apex, six ribbed, the ribs terminating in as many cristate tubercles.

"Low grounds and along streams, Canada to Georgia and west to Louisiana and Arkansas. Aug.—Sept. annual."

It is also noticed by Riddell (*Synop. Flor. West. States*, No. 1014), as everywhere abundant: he gives the vulgar name of bitter-weed to it. Rafinesque (*Med. Flor.*, ii. 190) speaks of it and says that it is called horse-weed, one of the names given by Dr. Robertson, and states that the species of ambrosia are antiseptic.

The *A. trifida* has not, as far as I can ascertain, been employed as a remedial agent, though some of the other species have been used with some success as febrifuges. Should the present plant, on a more extended trial, be found to be as successful in cases of mercurial salivation, as is shown by Dr. Robertson, it will be a very important addition to the materia medica.

It is to be found in abundance in the vicinity of Philadelphia. It is probable that the *A. elatior*, or ragweed so common in all our fields, would prov still more efficacious, as its sensible properties are much more develope than in the present plant.

Yours, &c., R. E. Griffith, M. D.]

Art. XIV.—*Case of Cæsarian Section.* By Brodie S. Herndon, M. D. of Fredericksburg, Va.

Mrs. Russel, aged about 30, moderately robust, the mother of sever children, fell in labour on the evening of the 1st October, 1845. Sh quickened early in May, and reckoned herself at her full time. In th course of the night the pains which had been paroxysmal became perm nent, and there supervened tenderness to pressure, vomiting and high va cular disturbance. The labour gave place to peritonitis. The duration the phlegmasia was a month, during which time the fluid contents of th uterus escaped, the abdomen shrunk, and the vaginal discharge becam very offensive. On the 6th of November, the os uteri admitting two finger I made persevering efforts to dilate it and introduce the hand ; the crani bones of the child denuded of scalp, rough and sharp, rested on the uterir aperture. These attempts failing, ergot was freely given, which occasione unequivocal pains, and procured the expulsion of a very putrid placent The patient continued to waste under irritating fever ; the discharge fro the uterus filling the room with stench. On the 16th of November, being now manifest that the woman must die soon without relief, I dete mined on the Cæsarian section. She was placed on the table and the c theter introduced : an assistant gathering up transversely a large fold the abdominal integuments. I thrust a bistoury through them, and, cuttir outwards, made at one stroke an incision of the full length require With the scalpel, division was now cautiously made at the upper point the wound of all the tissues, including the uterus, which was found adh rent to the parietes. The finger being introduced, the incisions were e tended upon it, laying open the parts from the umbilicus to the pubis. full-sized putrid child was readily extracted. The operation lasted half hour, and was performed in the presence of Drs. Brown, Wallace, Wi ford, and M'Guire. Only one artery was tied, and that was in the integ ments ; there were no utero-placental vessels; the uterus did not contr in the least, but remained a large flaccid sac, receiving the impressi of the liver at its upper part, this last organ being somewhat enlarged. was sponged out, and then the integuments were brought together wi stitches and strips. The patient took an anodyne, and a few hours af the operation expressed herself as feeling much more comfortable. With morphia at night, and quinine and nourishment in the day, the case did very well. The wound united by adhesions in nearly its whole extent. The woman is now—three months since the operation—quite well.

The obstetric student will find in Dr. Davis' great work, some interesting cases of gestation, in which the instinct of parturient expulsion was lost, and children were borne in utero for years, undergoing decomposition and being discharged by piecemeal. In Mrs. Russel's case, the operation was simplified, and the danger usually due to hysterotomy materially lessened by the adhesions of the uterus to the abdominal parietes. Extensive wounds of the abdomen seem often to be readily recovered from. A case occurred to Dr. Carmichael (now of Richmond), and Dr. Welford, in which a lad was ripped up and completely disemboweled by a boar, who, nevertheless, did very well; nay, even wounds involving the viscera may end favourably, as in the case of the lunatic related by Dr. Brigham, where a woman plunged a pair of scissors into her belly, tore out seventeen inches of bowel and cut it off, and yet recovered. In 1843, I performed the operation for inguinal hernia on a young man who had suffered strangulation a week. The gut was mortified, but all the symptoms were relieved. dejections were procured through the wound, and the patient recovered. There was artificial anus for a time, and, on one occasion, the bowel was prolapsed five or six inches through it, occasioning much difficulty in the reduction; but by the use of a truss, a recurrence of the accident was prevented, and defecation per anum became gradually established.

It must be admitted that these are fortunate cases, exemplifying a part of the aphorism " there are some you cannot kill," whilst we full often find in our experience abundant verification of its alternate, " there are others you may not touch."

Art. XV.—*Case of Labour complicated with Prolapsus Uteri.* By Augustus K. Gardiner, M. D.; Memb. of Massachusetts Med. Soc.; Physician to N. York City Dispensary; District Physician to N. York Asylum of Lying-in Women.

I was called, August 11th, at 4 P. M., to Mrs. Potter, aged 35, in labour, at her full time. The water had passed off early in the morning. and the pains had commenced within an hour. This was her fourth confinement. The children by the two first, healthy girls, now living, the youngest aged two and a half years. After this confinement she had slight prolapsus uteri. A year since she aborted at the fourth month, since which period the prolapsus has been much worse. Within the last four months the uterus has descended so much, that from two to three inches have been always external. During the last two months she has been obliged to kee her bed most of the time, from the irritation and pain proceeding therefrom. She had never made any attempts to restore the parts to their natura locality.

When I arrived, from the movements and cries of the woman, I judge that the labour was far advanced, and proceeded immediately to make a examination. Placing the woman, for that purpose, upon the back, an passing the finger down, from the os pubis, it encountered a somewhat fir mass, which at first I supposed to be the œdematous labia. This struc me with surprise, as the extremities were not at all swelled. By the sid of this supposed lip, the finger entered nearly its whole length, when i arrived at the bottom of the cavity without encountering any presentation Still moving the finger where the resistance was least, I found that it coul be passed entirely round, leaving the above-mentioned mass in the centre which, with its edges swollen and turned over, bore a strong similarity t the nose of a demijohn, especially when upon further examination an orific was discovered in its centre, sufficiently large to admit two fingers, an here the vertex was found already arrived in the hollow of the sacrum, an presenting in the position *occipito iliâque droite postérieure*, or the thir position of Baudelocque.

What was this mass which I have described projecting from the vulva and out of the body some two or three inches, firm, corrugated, dry Evidently it was not any form of polypus, or morbid growth, nor a prolaps of the cord. And, therefore, it must be—what? The os uteri.

At this time, not to incur the responsibility of the diagnosis and treatmen of a case almost unprecedented in the annals of obstetric science, I sent for friend, but he was engaged, and I was forced to continue alone. Till 1 P.M., I limited my services to the application of cold cloths to the parts not that there was much indication of their need, for the parts were coo but in reality for the purpose of doing something.

During this period the pains were strong, not alternating with repos but continuous, with exacerbations. The suffering was ascribed to th region immediately above the pubis, and at the small of the back, corre sponding to the insertion of the broad ligaments.

Seeing little if any advance of the head, and but slight dilatation of th os during six hours, I proceeded to one of the most distinguished of thi city's practitioners, and recounting the case, asked his advice. He gav but little credence to my improbable story, and advised delay. WAI Blundell very frequently says, in capitals, and I followed their joint advic

At 4 A.M., on the 12th, the woman, debilitated by several weeks' co finement to her bed, began to show signs of exhaustion, from the contin ance of the pains, which did not allow her a moment's rest. Her puls previously 60, had risen to 70, and various symptoms indicated convu sions. Delay, I considered, would be no longer justifiable, and that the time for some active interference had arrived; and though alone and without counsel, I proceeded to apply the short forceps. The vertex remained as before described. The first blade was applied with much ease, but the other with more trouble; partly owing to the irritation caused by the rubbing of the first upon the sides of the uterus, and partly from the difficulty of inserting the blade through the narrow orifice. On making some traction, applying but little force, with the conjunction of a stronger pain than any before, the head, as if dislodged from its situation, came down, but bringing with it the os, or rather stretching out its corrugated folds, its orifice remaining hard, and unyielding as for hours previous. I found greater difficulty than I had anticipated in taking off and withdrawing the forceps, as they were so strongly bound by the pressure of the head upon the walls of the uterus.

At this period the parts were in a most extraordinary state. The projecting tumour, which exteriorly the vagina, and interiorly the uterus, was of the form of a cone, eight inches in length; five inches in diameter at the base, where it united with the body; and three inches in diameter at its apex. In the apex was the opening, two and a half inches in diameter, through which the hairy scalp of the fœtus, in *rugæ* with the pressure, was slightly projecting. What was now to be done?

I felt the pulse—72, full, soft. I sent for various physicians for counsel in this difficulty. After the lapse of three-quarters of an hour, I was happy to see Dr. Cheeseman enter, a gentleman well known to the profession by his great attainments, and to the public by his extensive practice. To him I explained the case, and proposed to make an incision through the neck in order to liberate the stricture. After some deliberation he acceded to my plan. Some little time was lost in obtaining bistouries. Passing my finger into the os and gliding the bistoury upon it, I transfixed the part and made a cut of one and a half inches in length. This, however, not proving sufficient, with a probe-pointed bistoury I enlarged the incision an inch. Soon after, a renewal of the pain advanced the head, tearing up the incision an inch and a half, and a healthy girl soon looked us in the face, greeting us with more noisy exclamations than ever freed prisoner from the Bastile hailed his liberator.

The after-birth attached to the fundus was distinctly apparent above the pubis, and was delivered without difficulty or hemorrhage, after which the uterus remained external, but contracted to one-half its previous dimensions. The hemorrhage from the incision was now very slight, arising principally from its congested state. The os along its whole border, for the width of an inch, was indurated, and the integument thickened, and on its inner surface was changed in its character, so that it resembled cartilage—similar to the semi-cartilaginous patches sometimes seen upon the spleen in certain diseases.

At 6 A.M., I left the woman cleansed and comfortable. Skin moist; pulse 68, full, soft.

Since this period up to the present time, August 31st, the woman has continued to improve, though but slowly. The pulse has not risen above 84, always soft, and easily compressible. Appetite good. She has nursed her child regularly, and has been kept constantly upon the bed, rising only for the operations of nature. The uterus has been kept cool and moist with wet cloths, and with no other application has diminished in size; the cartilaginous portions around the border had ulcerated and sloughed off, and the incision granulated, till on the 24th, being about an inch in length, I attempted and easily succeeded in reducing the uterus—carrying it back to nearly its natural situation. On my next visit I found that upon rising to micturate it had again prolapsed. Since that period I have not been able to attempt the use of pessaries, which is my design as soon as the wound is entirely cicatrized.

The disease being now only a prolapse of the uterus, I have not thought it necessary to defer the publication of the case. Whenever the uterus prolapses, the woman reduces it herself; and using an injection of a decoction of white oak bark and alum, will, I hope, with a nutritious diet, so strengthen the parts, that nature may assist in performing a complete cure.

Before I had searched the various works on Midwifery, and the Diseases of Females, I supposed that this case was unique, and the treatment adopted on the occasion was that which my judgment indicated on the spot, unbiased by precedent. Subsequent research has brought to my knowledge two cases which have great similarity to my own, and also has discovered two others (in one where the woman died, in the other no account given of the delivery), bearing upon it, so far as they prove the fact that a woman may become pregnant and carry her child to the full time, notwithstanding a prolapsus uteri to the extent mentioned. (*Diseases of Females. Prolaps. Uteri*, by Colombat and Ashwell.) But these are so slightly substantiated by facts that they would have little weight, were they not corroborated by the others.

The first of the two principal cases, though given upon the testimony of Marignes, a physician of Versailles, and reported by Chopart, (*Traité des Maladies de la Vessie*, voi. ii. p. 73,) and repeated by Richerand and Capuron, has the following endorsement by Prof. C. D. Meigs, of Philadelphia. "Such relations as the above require a stronger confirmation before they should be deemed credible. They are necessarily hypothetical as to the important steps of the doctrine." This case is to be found in Colombat's, Ashwell's, and Churchill's *Diseases of Females.*

The second, from the *American Journal of Med. Sciences*, is as follows: "Dr. Grhun, of Reppen, relates the case of a woman, æt. 28, who, in the fourth month of pregnancy, in consequence of a violent effort, had a prolapse of the uterus; gestation, nevertheless, went on without any accident o the full time. When Dr. G. saw her, thirty-six hours had elapsed since abour had set in, and twenty-four since the waters had been discharged. The uterus hung between the patient's thighs. The vertex of the child presented, and the neck of the uterus was dilated to the size of a two franc piece. Not being able to obtain a greater dilatation, Dr. G. made an incision, one inch in ength, in one side of the neck of the uterus, and a dead, but well-developed child was extracted. The delivery of the placenta was attended with very profuse hemorrhage, which was arrested by injections of cold water. Aferwards the uterus was reduced, and everything went on well."

Cases of prolapse during labour are sufficiently numerous, but the uterus being in its natural state, the os dilatable and not suffering from previous irritation, little if any additional difficulty is caused by this accident.

In all the cases reported before mine, where the os was indurated, *he child was born dead;* these could not, therefore, be called successful cases, and any line of practice deduced from them, must have been, however correct, on supposition. No mention is made in these reports of the ime allowed to pass away in awaiting dilatation. Cazeaux, my former excellent instructor, on the strength of Chopart's case, in his valuable *Traité des Accouchemens*, p. 569, thus gives the following rules:—"During the labour, all attempts at reduction would be hazardous. We must be content in hastening, as much as possible, the dilatation of the neck and to prevent by proper incisions the ruptures of which it is in danger, in case t should be indurated.

"The extraction of the placenta requires great circumspection; it is easy o perceive that we should not trust to its expulsion by the operation of nature, and still less should one make traction by the cord, in the customary manner; it is, therefore, necessary to peal off the placenta artificially. Immediately after, the uterus contracts, and the reduction is oftentimes an easy matter."

In addition to this, I would urge the necessity of bringing the labour to a close as soon as possible, and not suffer the child to perish, as I fear was done in the two reported cases, by allowing the head to remain long in the ower strait, undergoing great pressure in that impacted situation. If the membranes are intact, they should be early ruptured, and the presenting portion brought down by the application of instruments, if necessary. This, most assuredly, should be done before making any incisions in the neck, waiting *a reasonable time* for dilatation.

Blundell (*Diseases of Women*, p. 43), says, "If the woman is at the end of pregnancy, or if the womb came into sight through the external parts, I suppose it would be your duty to dilate the os uteri with the fingers, and in this way accelerate the birth of the child as much as possible; but f it was down a little way merely, I should not meddle with it, but leave the woman to her own resources. But if, in the latter months, the womb were lying externally and between the limbs, and it could not be put back, I should recommend the bringing on of delivery, by puncturing the membranes; and then, when parturition came on, I should as before assist in dilating the os uteri. In Hervey's case, it was proposed to extirpate the uterus; but I certainly prefer the induction of parturition before extirpation."

These remarks are evidently those of a theorist, and are applied to a case which he had never seen. If he had, what possible reason could he give for such practice? Would it not only destroy the child, but also the woman? Would not the hemorrhage be immense? Hervey's case I do not find, but I cannot conceive one which would require such treatment. This surely must be a vision of his younger days, which now, in the face of this instance, when the labour was allowed to go on to its full time, he must renounce for truth born in actual, not imaginary labour, and strengthened by success.

REVIEWS.

Art. XVI.—*On Disorders of the Cerebral Circulation; and on the Connection between Affections of the Brain and Diseases of the Heart.* By George Burrows, M. D., &c. &c. 8vo. pp. 220. London, 1846.

This volume forms an interesting and very valuable contribution to pathology. Without laying any pretension to the character of a complete treatise on the subjects discussed, the author has, in the first three of the sections into which the work is divided, presented views in relation to the peculiarities of the circulation within the cranium, and to the effects of alterations of vascular pressure within that cavity on the functions of the brain, which are calculated to throw much light upon cerebral affections generally; while, in his application of these views to the elucidation of the proximate cause of apoplexy and other comatose affections, he has done much towards removing the errors into which many of the most distinguished of our modern pathologists and therapeutists have fallen in regard to the nature and treatment of an all-important class of diseases.

In the four remaining sections Dr. Burrows directs attention to the frequent connection which exists between affections of the brain and nervous system and structural diseases of the heart. In this portion of the work numerous facts and considerations are adduced calculated to improve our acquaintance with the true pathological character and proper management of many of these nervous affections, the actual cause of which has heretofore been involved in obscurity, while their treatment has, in consequence, been empirical and often highly injudicious.

The mass of the materials of which the volume before us is composed, formed the substance of the Lumleian Lectures, delivered by the author in the months of February and March, 1843 and 1844. The first series of which lectures were published in the London Medical Gazette, for May, 1843. The present work is not, however, a mere transcript of these lectures. A considerable amount of new matter of a very interesting character has been introduced, as well as several cases bearing upon the pathological doctrines maintained in the different sections. The observations, also, on the treatment of apoplexy and hemiplegia, as well as those upon the treatment of acute affections of the heart accompanied with symptoms of nervous irritation have been extended considerably beyond the limits to which they were confined in the lectures delivered before the college of physicians.

To the volume is appended six coloured drawings, exhibiting the relative degrees of congestion of the vessels of the head, both external and internal, in animals destroyed by hemorrhage and by strangulation; by prussic acid, and then suspended, the one by the ears, the other by the hind legs; and by strangulation, the one being immediately suspended by the ears, and the other laid upon its side.

The first section treats of the cerebral circulation—in reference more especially to the modifications the circulation in the brain is capable of undergoing in health and disease; and as to how far the central organ of the circulation, the heart, when its circulating powers are increased or diminished, is capable of disturbing the functions of the brain, and in what manner these changes in the circulation affect the brain.

Our readers are all aware that many modern physicians of very high standing in the profession have, from experiments, and from reasonings founded on the mechanical construction of the cranium, arrived at the conclusion, that the absolute quantity of blood within the cranium is at all times very nearly the same.

The adoption of this opinion by most of the medical writers of Great Britain is, in a great measure, owing we suspect to the authority of Dr. Abercrombie, in whose work on the Diseases of the Brain and Spinal Marrow, it is inculcated as being founded upon a series of experiments performed by Dr. Kellie, as well as upon the peculiar construction of the cranium.

Dr. Burrows presents an analysis of some of the experiments of Dr. Kellie, and shows how very little evidence they afford in support of the general inferences he has drawn from them,—namely,

> "1. That a state of bloodlessness is not discovered in the brains of animals which have died by hemorrhage; but on the contrary, very commonly a state of venous cerebral congestion.
>
> "2. That the quantity of blood in the cerebral vessels is not affected by gravitation, or posture of the head.
>
> "3. That the congestion of the cerebral vessels is not found in those instances where it might be most expected; as in persons who die by hanging, strangulation, suffocation, &c.
>
> "4. That if there be repletion or depletion of one set of vessels (arteries or veins), in the cranium, there will be an opposite condition of the other set of vessels."

After pointing out the direct opposition which exists between the conclusions to be drawn from the experiments of Dr. Kellie, according to his own admissions, and the assertion made by him in a subsequent communication to the Medico-Chirurgical Society of Edinburgh, "that in the ordinary state of the parts, we cannot lessen to any considerable extent, the quantity of blood within the cranium by arteriotomy or venesection;" whereas, if the skull of an animal be trephined, then hemorrhage will leave very little blood in the brain; Dr. Burrows proceeds to detail a series of experiments performed by himself by bleeding animals to death, and comparing the state of the cerebral blood-vessels in them and in animals which had died from other causes.

> "On the 11th of January, 1843, I killed," remarks Dr. B., "two well-grown rabbits. The one (A, Plate I.) by opening the jugular vein and carotid artery on one side of the throat, the other (B, Plate II.) was strangled. Each anima died violently convulsed. A ligature was drawn tightly round the throat of the rabbit A immediately it expired, to prevent any further escape of blood from the vessels of the head. The rabbits were allowed to remain twenty-four hours on a table, resting on their sides. While the blood was flowing from the rabbit A, the conjunctiva was observed to become pallid, and the eyeballs to shrink within th sockets. Upon the examination of the head of this rabbit, the integuments and muscles appeared blanched and exsanguined. Upon removing the upper por tions of the cranium, the membranes of the brain were found pallid, and scarcel the trace of a blood-vessel was to be detected on the surface of the brain. Th longitudinal and lateral sinuses were nearly empty of blood, and their course wa not denoted by any colour of blood. Upon making sections of the brain, th interior appeared equally exsanguined.
>
> "Soon after the cord was drawn tight round the throat of the rabbit B, the con junctival vessels became congested, the eyeballs turgid, prominent, and even pro jecting beyond the margin of their sockets. The integuments and muscles of th

head were found full of blood. Upon opening the cranium, the superficial vessels of the membranes, as well as the sinuses, were full of dark liquid blood. The whole substance of this brain, and its membranes, appeared of a dark reddish hue, as if stained by extravasated blood. The contrast between the two brains in point of vascularity, both on the surface and in the interior, was most striking. In the one scarcely the trace of a blood-vessel was to be seen; in the other every vessel was turgid with blood."

These experiments were repeated with similar results.

Dr. Burrows remarks that he has found the brains of sheep, slaughtered by butchers, much less depleted than the brains of rabbits which have died of hemorrhage. "But," he remarks, "these sheep did not die from simple loss of blood; but partly from division of the pneumonic nerves and cervical portion of the spinal cord, which lesions no doubt influenced the appearances."

In a tabular view of the principal pathological appearances met with in 72 insane patients examined at Bethlem Hospital by Mr. Lawrence, it appears that in 53 the vessels of the brain were found congested; sometimes turgid, at others extremely turgid,—and upon one occasion, Mr. Lawrence reported that he had never seen the blood-vessels of the brain and its membranes more injected with blood.

"Among the whole number, the cerebral vessels were found exsanguined—'unusually empty'—only once, and in this case death was caused by hemorrhage from the bursting of a femoral aneurism three days prior to the fatal event. When we learn," remarks Dr. B., "that in the autopsies of 72 insane patients, the cerebral vessels were found unusually empty, only once, and that this patient bled to death from the bursting of an aneurism, can we give credence to the statement, that the quantity of blood in the cerebral vessels is always nearly the same, or, that artificial abstraction of blood does not diminish the actual quantity in the cerebral vessels? Hence," remarks Dr. B., "it is not a fallacy, as some suppose, to assert that bleeding diminishes the actual quantity of blood in the cerebral vessels. By abstraction of blood we not only diminish the momentum of blood in the cerebral arteries, and the quantity supplied to the brain in a given time, but we actually diminish the quantity of blood in the vessels."

In order to ascertain, so far as such an experiment can do, the effect of the gravitation of the blood upon the vessels of the brain, Dr. B. destroyed by prussic acid two full-grown rabbits—

"And while their hearts were still pulsating, the one (C, Plate III.) was suspended by the ears, the other (D, Plate IV.) by the hind legs. They were left suspended for twenty-four hours; and before they were taken down for examination, a tight ligature was placed around the throat of each rabbit, to prevent as effectually as was possible, any further flow of blood to or from the head, after they were removed from their respective positions.

"In the rabbit C, the whole of the external parts of the head, the ears, the eyeballs, &c., were pallid and flaccid,—the muscles of the scalp and bones of the cranium were also remarkably exsanguined. Upon opening the cranium, the membranes and substance of the brain were pallid, the sinuses and other vessels were exsanguined; anemic beyond expectation. In the rabbit D, the external parts of the head, the ears, eyeballs, &c., were turgid, livid, and congested. The muscles and bones of the cranium were of a dark hue, and gorged with blood, which at some parts appeared extravasated. Upon opening the cranium, the membranes and vessels were dark and turgid with liquid blood; the superficial veins were prominent, the longitudinal and lateral sinuses were gorged with dark blood, and there was staining of the tissues, if not extravasation of blood into the membranes. The substance of the brain was uniformly dark, and congested to a remarkable extent.

"From the foregoing experiments it would appear, that the principle of the subsidence of fluids after death, operates on the parts contained within the cranium, as well as upon those situated in the thorax or abdomen.

“The discovery,” remarks Dr. B., “of the operation of this force on the blood within the cranium after death, suggests a precaution very essential to be followed, when it is desired to ascertain the precise amount of congestion of the cerebral vessels at the time of death. In such cases a ligature should be placed around the throat of the corpse, and drawn sufficiently tight to compress the cervical vessels, and arrest all flow of blood through them. This precaution will be most required in the examination of bodies, where from the kind of death, the blood may be suspected to remain fluid in the heart and great blood-vessels. The depending or elevated position of the head during the examination of the body will not then induce deceptive appearances, which mislead us in our conclusions as to the previous amount of congestion of the cerebral vessels.”

In the brains of those who have died from hanging, Dr. B. admits, that frequently the vessels will be found neither congested nor overloaded with blood, and he attempts to account for this fact from the circumstance of the pressure of the rope not always being such as to completely obstruct the return of blood through the external jugular vein on the one side, although it has effectually stopped the current on the other—and from the subsidence of the *fluid* blood after death, while the body is yet suspended, through the cervical vessels which are not completely obliterated by the pressure of the cord, and through the vertebral sinuses, and spinal plexus of nerves which are scarcely if at all affected by the compression of the rope.

“The true state of the cerebral vessels in the bodies of those who have died by hanging, is often,” remarks Dr. B., “incorrectly estimated, from the anxiety to examine the lesions produced by the compression of the rope on the larynx and trachea, as well as the condition of the heart and lungs. In making such examinations all the great vessels of the neck are usually cut across, and the thoracic organs removed from the body before the head is examined. While the head is elevated during the operation of removing the skull cap and examining the brain, the *fluid* blood gravitates from the cranium, and pours from the divided cervical vessels into the chest, and then, to the surprise of the by-standers, ‘the sinuse of the dura mater, and the larger veins on the surfaces, are found but moderatel filled,’ or ‘do not appear unnaturally full.’ ”

In relation to the position, that when there is repletion or depletion o one set of vessels (arteries or veins) in the cranium, there will always b an opposite condition of the other set of vessels, while the total amount o blood within the cranium will be unaltered, Dr. B., while he admits th probability of an occasional disturbance in the equilibrium between th quantities of blood in the arterial and venous systems of the brain, and tha such disturbance is productive of many serious cerebral symptoms, stil presumes that, even in these cases, there is also a change in the absolut quantity of blood within the cranium, and not a mere change in the relativ quantities in the two systems of vessels.

Dr. B. regards the extravascular serum which exists in the ventricles membranes, and substance of the brain as an important element of the contents of the cranium—and he admits that the whole contents of the cranium, that is, the brain, the blood, and this serum together, must be at a times nearly a constant quantity.

“But variations in the quantity of serum within the cranium are quite con patible with health; and in morbid states of the brain we know that, at one tim the cerebral substance, its membranes and ventricles will be nearly devoid serum, while at another time, these parts abound with serous effusion. In accor ance with the variations in the quantity of extravascular serum, there must b fluctuations in the quantity of intravascular fluid, the blood. From this consid

> ration alone, it seems that the blood may be increased or diminished in the cranium. The increase or decrease may affect the two systems of vessels, arterial and venous, equally, or the equilibrium may be disturbed; there may be excess in either arteries or veins, without any necessary diminution in the quantity of blood contained in the other set of vessels."

Dr. B. does not believe that the contents of the cranium are entirely removed from the influence of atmospheric pressure.

> "If there were not always," he asks, "an equilibrium of pressure on the parts within and without the cranium, very serious consequences would arise at the various foramina of the skull."
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> "Atmospheric pressure is undoubtedly exerted on the blood in the vessels entering the cranium. This pressure, by a well-ascertained law in hydrostatics, must be transmitted in all directions through the fluid blood, and hence to the blood and other contents within the cranium. "If," adds Dr. B., "in the natural state of the parts, the brain is defended from atmospheric pressure, should we not expect to find the functions of that organ disturbed in some way when part of the walls of this sphere is wanting. But in children with open fontanelles, and in adults who have lost part of the bones of the cranium, we observe no peculiar disturbance of the functions of the brain from this gap in the walls of the imaginary sphere. But, lastly, the effects of gravitation on the fluid contents of the cranium, and the effects of cupping-glasses, which will often draw blood from the vessels of the dura mater, causing ecchymosis there, assure us that the cranium is not a perfect sphere in the sense in which it has been supposed."

Dr. B. next refers to the recorded experience of those most distinguished for their cultivation of morbid anatomy, who state that they have frequently discovered the vessels of the brain and its membranes "full of blood," "loaded," "turgid," gorged," "congested"—in a state of hyperæmia. The leading authorities referred to are, Morgagni, Portal, Bright, Andral, and Constadt.

In the second section of the work Dr. Burrows treats on "Vascular pressure within the cranium, and its influence on the functions of the Brain." He thinks it probable that the functions of the brain cannot be maintained in a healthy state without a certain amount of pressure upon the cerebral substance.

> "Under the ordinary conditions of health, the cerebral substance is defended by its osseous case from the influence of all variations of external mechanical pressure, and is only subjected to causes of pressure acting within the cranium. A principal and constant cause of pressure from within, is the momentum of the blood distending the arteries and veins ramifying in the membranes and substance of the brain."

Dr. B. proceeds to consider the objections to this position. 1st, that the cerebral substance is principally composed of inelastic fluids which are incompressible; and 2d, that the brain is incompressible by any such force as can be conveyed to it from the heart through the carotid and vertebral arteries. He shows, that the contents of the cranium, although very incompressible, are, nevertheless, highly elastic, and that a force is constantly operating upon the cerebral substance, through the momentum of the blood, derived partly from the contractile power of the left ventricle, and partly from the reflux of the venous blood during expiration.

The dilatation of the blood-vessels, which is the result of a distending force, must be a cause of outward pressure on the surrounding tissues in all parts of the body, but, as Dr. B. remarks, there is no organ which will so completely sustain this pressure as the brain.

> "We observe that the tissues of other organs expand and swell in proportion

to the momentum of blood in their vessels; but the substance of the brain cannot expand because it is confined within the limits of its osseous case. But when a portion of the cranium has been destroyed by accident or disease, or when a piece of the skull has been artificially removed in a living animal, and the dura mater, has thus been exposed to view, phenomena are remarked which indicate pressure on the cerebral substance by a force acting from within. With every systole of the ventricles of the heart, the surface of the dura mater rises a little; the brain appears to swell for a moment, and has a tendency to transgress the level of the bones of the cranium. The surface of the dura-mater subsides, and the brain shrinks during the period of their diastole. That such movements of the brain result from the arterial pulse, or momentum of the blood distending the arteries, may be proved by making pressure upon, and still more decidedly by putting ligatures around the arteries going to the brain."

In proof of this Dr. B. refers to the observations and experiments of Chelius, Richerand, Bichat and Ecker of Stuttgard. It has also been remarked, he adds, that when syncope occurs, this alternating motion of the brain ceases, and again returns when the heart's action is renewed.

The respiratory movements of the brain are next alluded to; these are generally considered as partly if not wholly attributable to the reflux of the blood in the veins during expiration, though Ecker attributes them in great part to the ascent of the cerebro-spinal fluid during expiration.

"The existence," says our author, "of a considerable force within the cranium, arising from vascular distension, and producing outward pressure, must, I think, be conceded. If the walls of the cranium were soft and yielding like those of the abdomen, the cranium would expand, and its capacity be increased in proportion to the increased volume of the brain at each expiration, during which that organ is the seat of an increased afflux of blood; again, when the brain was diminished in bulk during inspiration, the walls of the cranium would follow this subsidence, and its capacity would be proportionably lessened. But as the walls of the skull are rigid and inexpansive, when the brain has this recurring tendency to increase in volume, the walls around oppose the expansion, and sustain this centrifugal, or excentric pressure, which is reflected back upon the substance of the organ."

This pressure which the brain constantly sustains is equalized under the various circumstances which tend to augment or diminish it by the ample development of the venous system in the cranium and spinal canal, which affords such ready exit for redundant blood, and, very materially, according to Dr. B., by the movements of the cephalo-rachidian or cerebro-spinal fluid.

After pointing out the facts which prove the ready escape of this fluid from the lateral ventricles, through the intervention of the third and fourth ventricles, into the spinal canal, and vice versa, and of the serum of the arachnoid of the brain into the vertebral canal, Dr. B. notices the conclusions of Ecker as to the flow of the cerebro-spinal fluid to and from the brain during expiration and inspiration, and then proceeds to inquire into the true functions of this fluid. He remarks:

"This extravascular serum appears to me to be supplemental to the other contents of the cranium: it is removable by pressure or absorption, at one time giving place to an increased quantity of blood in the cranium, at another, making up for a deficiency of blood in the vessels of the head. This extravascular serum not merely acts as supplemental to the varying quantity of blood, but also to the variable quantity of nervous matter in the brain. Its quantity is in the inverse proportion to the quantity of this nervous matter. Thus in hypertrophy of the brain there is a most remarkable deficiency of serum within the cranium; the brain, its ventricles, and membranes, are so devoid of this fluid that they are almost dry: on the contrary, in atrophy of the organ, the ventricles and membranes are distended with fluid. This extravascular fluid may probably perform another office perhaps through this cerebro-spinal fluid a more equable pressure is diffused over the whole mass of the brain and cord; and for the reception of this regulator of pressure may be the contrivance of those cavities called ventricles, which dip into the central parts of the brain. The sac of the arachnoid may serve the same purpose."

After pointing out the manner in which disturbance of the functions of the brain is prevented when congestion of the brain is suddenly induced, or an abstraction of blood from the cranium is in any manner effected, by the escape from or flow into the brain of a portion of the cerebro-spinal fluid, Dr. B. remarks—

"When obstruction to the return of blood from the brain takes place, so that the blood becomes almost stagnant in the sinuses, that part of the force of the left ventricle. which, in the normal state of the cerebral circulation. is expended partly in propelling the blood onward through the capillaries towards the right auricle, and partly in distending the vessels through the cranium—is, under such circumstances, expended upon the interior surface of the cerebral blood-vessels. This pressure is partly sustained by the resistance of the vascular tissues, and the remainder is borne by the surrounding cerebral substance; whatever this force may be, it becomes a source of increased pressure upon the cerebral substance; and the more so, according to the pre-existing morbid states of the encephalon and its vessels. When the circulation is thus excited or obstructed, an obvious state of congestion of the integuments of the head and face is produced, and from the experiments I have detailed, it may, I think, be inferred, that a simultaneous congestion of the internal vessels of the cranium is formed.

"In previously healthy conditions of the cranium, when it contains nothing but the brain and normal quantity of serous fluid, the cerebral substance may readily accommodate itself to a temporary increase of blood in its vessels, arterial or venous, or in both, and to the consequent pressure, by expulsion of a certain amount of serum; but when the cranium contains abnormal and unremovable substances, then the brain cannot bear these accessions of vascular fullness, and consequent pressure. In those pathological states of the encephalon where there is an increase in the quantity of solid matter within the cranium and a diminution of the quantity of extravascular serum, as in hypertrophy of the brain, tumours and cysts in that organ, and in large extravasations of blood on the surface, every cause which is capable of exciting the heart's action produces a notable increased disturbance of the functions of the brain. The variable character of the symptoms of cerebral disturbance in these permanent lesions within the cranium are thus probably accounted for, by the variable vascular pressure. It seems to me probable that many permanent structural lesions within the cranium do not affect the functions of the brain by pressure, except when there is some cause in operation capable of inducing vascular congestion, or when the lesion is of a mechanical nature, or is gradually increasing.

"If the force of the contractions of the heart be diminished in these morbid states of the encephalon, there is usually a corresponding relief to the cerebral symptoms; but should the same diminution in the force of the circulation be produced in healthy states of the brain, the functions of the organ are suddenly annihilated, from insufficient vascular pressure: syncope is the result. Syncope is occasioned by insufficient vascular pressure on the brain, and not from the inadequate quantity of blood supplied to the brain and its vessels, as is commonly supposed."

The accuracy of this latter position is shown by a reference to the particular causes and circumstances by and under which syncope is the most readily induced. Thus every means by which vascular pressure on the brain is diminished to any great extent, as depressing mental emotions, sudden loss of blood, the erect posture of the body in debilitated persons, and all contrivances which diminish the momentum of the blood flowing towards the brain, will almost certainly induce syncope; which, according to Dr. B., differs from apoplexy in every respect but this one, namely, that in both there is total temporary abolition of the functions of the brain.

Dr. B. refers the more prominent of the nervous symptoms which take place in anæmia rather to insufficient vascular pressure than to an insufficient quantity of blood in the substance of the brain.

> "Simple anæmia," he remarks, "certainly does not produce that train of symptoms which is usually ascribed to a want of due supply of blood to the brain. Probably there is no condition of the brain, not even that induced by repeated hemorrhage, in which the substance of the organ is so completely anæmic as in genuine hypertrophy. In this rare cerebral affection the membranes and substance of the brain are found dry, and devoid of blood or serum; the medullary matter is as white and firm as blanc-mange, or hard-boiled white of egg. The cranium is already so completely filled by hypertrophy of the cerebral substance, that the blood is unable to make its way through the vessels; and with all this bloodlessness of the organ, we witness none of the nervous symptoms of general anæmia. On the contrary, the symptoms are rather those commonly ascribed to the effects of inordinate supply of blood to the brain. In these cases of hypertrophy of the brain the force of the heart is unimpaired, the blood is propelled with its normal force into the cerebral arteries, but it cannot make its way through the capillaries: and thus the static force of the heart is expended on the surrounding cerebral substance: so that, in anæmia of the brain from this cause, there are none of the symptoms present which accompany anæmia of the organ produced by hemorrhage, in which condition there is insufficient power of the heart to produce the amount of vascular pressure essential to the functions of the brain. Hence, we infer that the simple condition of anæmia of the brain, independent of diminished vascular pressure, is insufficient to produce the peculiar train of symptoms so often observed in general anæmia.
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> "It is in general anæmia, caused by profuse hemorrhage, that we witness the fearful catalogue of symptoms indicating disturbance of the nervous centres in their most aggravated form. In such a condition of the body, we remark, that whatever tends temporarily to assist the heart, or stimulate it to propel the blood more forcibly towards the brain, alleviates the nervous symptoms; on the contrary, whatever places the heart at greater disadvantage in propelling the blood to the brain, aggravates these nervous symptoms. The loss of consciousness in syncope, the convulsions after hemorrhage, are often immediately terminated by the horizontal posture so favourable to the momentum of the blood in the carotid arteries.
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> "From a number of curious and interesting cases illustrating the state of the nervous centres, when the system is reduced to a state of general anæmia, eithe by loss of blood, or other debilitating causes, the work of Dr. Marshall Hall 'On th Loss of Blood, &c.,' may be consulted with advantage. In one and all of thes cases of disturbed functions of the brain, an immediate but temporary relief to th symptoms is afforded by horizontal posture, stimulants, and other means whic favour the momentum of the blood through the carotid and vertebral arteries The senses of sight and hearing are often impaired or lost during states of gene ral anæmia, but posture alone will sometimes restore these functions of the brain.'

The author adduces various examples to show the influence exercise by posture over the cerebral functions, and points out finally the effects o diminished and unequal vascular pressure upon the brain as strikingl manifested when one or both common carotids are temporarily compressed or are suddenly and permanently closed by ligature or other means. Th effects thus resulting have induced a resort to ligature of the common car tid in the treatment of some cerebral disorders, such as epilepsy, which ar almost incurable by other means. After referring to the experience of M Preston, Dr. Caleb Parry and Dr. Norman Chevers in relation to the succes of this procedure, Dr. B. remarks, that although ligature of the commo carotid is attended with risk to life in perhaps one-fourth of the cases i which it is employed, still experience has shown that where proper precautions have been taken, it is not so dangerous an operation as many suppose, and that, consequently, when in violent and hopeless cases of epilepsy and some kindred affections characterized by extreme cerebral congestion other remedies fail us, this operation may be resorted to.

This closes the first two sections of the work; both of which are replete with interest. While the facts set forth in them remove many of the errors in regard to the intercranial circulation into which most recent pathologists have been led by mistaken views, sanctioned it is true by high and imposing authority, but nevertheless clearly disproved by experiments and the facts revealed by pathological anatomy, they present also clearer and more consistent views of the nature and causes of many of the disorders of the cerebral circulation than those generally entertained. Though our extracts from this portion of Dr. B's treatise have been frequent and extended, we have scarcely done justice to the good sense and candour exhibited by the author in the prosecution of his inquiries—the clearness of his reasoning, and the aptness of his illustrations.

The third section is devoted to a consideration of apoplectic coma—or that state which consists in the suspension of the functions of the brain while those of the spinal cord remain more or less intact.

The causes of coma are analogous to those which we experimentally find are adequate to destroy the functions of the cerebro-spinal nerves in any part of their course, namely: pressure on the nervous fibres; division of the nervous substance; disorganization of the nervous matter; interrupted supply, or deficient momentum of blood in the nervous substance; the action of narcotics. Each of these causes will, Dr. B. believes, be found adequate to explain the fatal event in different cases of apoplexy; and that when we cannot discover a physical cause of pressure in fatal cases of those diseases, we shall generally be able to detect the presence, or previous operation of one of the other causes just enumerated.

Dr. B. notices the cases upon record of fatal cases of apoplexy in which, after death, no morbid appearance in the brain is discoverable. In some of these cases the absence of any unusual turgescence of the vessels of the brain, Dr. B. conceives, may be readily accounted, for from the effects of the active depletion, cold applications to the scalp, elevated position of the head, and abstraction of all stimulants practised in the treatment of the case.

It appears to him that the true explanation of the cause of the coma in the cases of so-called simple apoplexy, is to be found in the previous existence of a state of congestion of the vessels within the cranium, brought on either by determination of blood to the head, or detention of blood in that part. The fatal event in these cases he ascribes to the gradual saturation of the substance of the brain with undecarbonized blood, when the pressure has been adequate to suspend consciousness for a time, and the respiration has become altogether involuntary, slow and stertorous.

> "The apoplectic person remains in a condition analogous to that of one whose rima glottidis is constricted, or who has been suffering from apnœa for some time. The apoplectic patient then dies, not simply from pressure or lesion of the brain, but from the effects of imperfect respiration."—"Other cases of so-called simple apoplexy are probably fatal from the circulation of poisoned or narcotized blood through the nervous centres—the vital fluid being contaminated by urea, spirits, opium, or some other deleterious principle."

Serous apoplexies Dr. B. refers to congestion of the cerebral blood-vessels. After noticing the views of Portal and Abercrombie, both of whom deny that the serum in what has been termed serous apoplexy is the cause of the coma, our author remarks that,—

"From the concurrence of all the best authorities, it would seem that the presence of serum in the brain renders that organ more susceptible, and liable to suffer from any congestion of its blood-vessels and the consequent vascular pressure, but the effused serum itself cannot be regarded as a cause of cerebral pressure adequate to the production of apoplectic coma."

Dr. B. denies, also, that, in those cases of apoplexy attended with extravasation of blood, the latter is to be viewed as, in every instance, the cause of the apoplectic coma, although it undoubtedly is of the concomitant paralysis. The coma does not always commence until some time after the extravasation has taken place, and in some cases goes off while the pressure from the extravasated blood remains, while, in other cases, an effusion of blood in much smaller quantity takes place either simultaneously with or subsequent to the occurrence of coma. Hence, if the pressure of the extravasated blood is supposed to be the immediate cause of the apoplectic coma, then, remarks Dr. B., we must account for the paradox of a small extravasation producing a coma which terminates fatally, and a large effusion of blood having no such effect.

Dr. B. details two cases of fatal apoplexy in order to show that copious extravasation of blood into the brain cannot by itself be regarded as the cause of apoplectic coma ; although it is of the paralysis that is concomitant with the coma, and which remains after the coma has disappeared.

"Unless blood be effused towards the medulla oblongata, and thus interrupt the continuity of the nervous substance between the brain and the upper part of the spinal cord, there appears to be something beyond effusion of blood required to produce fatal apoplectic coma."

"When cerebral hemorrhage has stopped, I suspect the blood ceases to be a real source of general pressure, although as it increases the quantity of extravascular matter in the cranium, it also offers additional resistance to the entrance of the normal quantity of blood into that cavity; hence, healthy vascular distension becomes excessive, and the symptoms of general cerebral pressure are easily developed. Thus, the compression produced by extravasation will depend more on the rapidity and situation of the effusion than on the amount. If the effusion be slow, and not near to the base, although the amount be considerable, the effects will be slight in comparison.

"I therefore infer, that in the larger number of cases of apoplexy accompanied with extravasation of blood, the coma is to be attributed to antecedent or co-existing cerebral congestion ; while the paralysis, which is more durable, is dependent upon the limited local mischief produced by the extravasation. The close affinity between apoplexy succeeded by hemiplegia, and sudden hemiplegia unpreceded by apoplexy, has long been recognized. Each of these affections is usually connected with extravasation of blood within the cranium. In the former case, the hemorrhage is associated with vascular congestion; in the latter, the congestion is probably not present.

"From the foregoing inquiry into the different lesions discovered in fatal cases of apoplexy, it would appear that all the symptoms of apoplectic coma may exist without any cerebral effusion; and that effusions of serum or blood may exist to a very large extent within the cranium, and yet there shall be no apoplectic coma. Again, a person may be in a state of apoplectic coma for many hours, entirely recover from the coma, but shortly afterwards die, when effusion of serum or blood will be discovered in the brain." "Hence, it appears, that apoplectic coma may exist without effusion, and cerebral effusions to a great extent may exist without coma. This supports the opinion already expressed, that in a vast majority of cases of apoplexy, the coma is attributable to the pressure induced by vascular congestion. It is not meant to assert that other causes may not annihilate the functions of the brain, and cause coma, as, for example, the circulation of venous blood through the organ, but the foregoing remarks apply to the coma of apoplexy."

Dr. B. next inquires why that apoplectic coma is not produced by those frequently recurring causes of determination of blood to the brain, such as violent exercise, strong mental emotions, and intemperance. He refers the protection of the brain from pressure under ordinary circumstances of increased determination to its vessels, to the course of the arteries through tortuous canals of bone, and the anatomical arrangement of the sinuses of the dura mater. Any sudden increase in the momentum of the blood flowing to the cranium being diminished by the first, while the second give a free exit to the blood from the brain without being liable to have their areas either increased or diminished in any considerable degree,—and in addition to these means of protection, Dr. B. considers that the existence of the extravascular serum within the cranium, by its capability of flowing from the cavity of the skull into the spinal canal, affords an additional protection to the brain against the effects of any sudden congestion of its blood-vessels.

The views of Dr. B. in relation to the immediate cause of apoplectic coma are of a highly interesting character; they are, it is true, in direct opposition to those advocated by some of the most distinguished of our modern medical authorities,—but a careful examination of the facts and arguments upon which they are based, will, we are persuaded, be sufficient to convince every one of their correctness. We believe that the errors into which modern pathologists have fallen in regard to the true character of apoplexy, have resulted from misconceptions as to the peculiarities of the circulation within the cranium, on the one hand, and their assuming, on the other, as correct, the results deduced from experiments undertaken to prove that under no circumstances, so long as the bones of the skull remained entire, no material change can take place in the absolute quantity of blood circulating in the vessels of the brain. Dr. B. has, however, very clearly shown that the amount of blood in the intercranial vessels, both arteries and veins, may be augmented or diminished by a variety of causes, and that this augmentation or diminution, when carried to a certain extent, is invariably productive of a disturbance of the functions of the brain—the pressure resulting from over distension giving rise to a state of coma—and the diminution of this pressure, from a deficiency of vascular distension within the cranium, producing a sense of exhaustion or complete syncope. He has likewise, to make use of the words of Dr. Watson, (*Lectures on the Practice of Physic*,) "most convincingly shown that the conclusions of Dr. Kellie and others (drawn from experiments performed by Dr. K.) were erroneous. The theory which is thus demolished," continues Dr. Watson, "involved probably more than one erroneous assumption. By this refutation of a prevalent error, not unlikely to warp or mislead our practice in some cerebral disorders, the science of medicine has derived an essential service."

In the fourth section Dr. B. considers the connection of apoplexy and hemiplegia with diseases of the heart;—the influence of lesions of the heart on the cerebral circulation, and the relative frequency of different cardiac lesions in apoplexy and hemiplegia.

Dr. B. believes that there is a much greater dependence of structural and functional disorders of the brain upon diseases of the heart, both acute and chronic, than is commonly supposed;—that hypertrophy, dilatation, and valvular diseases of the central organ of the circulation, which are such constant causes of congestion in other parts of the body, will be frequently found to co-exist with similar conditions of the vessels within the cranium; and that in cases of effusion of serum, or extravasation of blood within the cranium, we shall find, not unfrequently, those same lesions of the heart which are so repeatedly remarked to be coincident with dropsies and hemorrhages in other parts of the body.

From various sources Dr. B. has formed the following table, which gives an analysis of 132 cases of apoplexy and sudden hemiplegia with reference to the co-existence of cardiac disease.

Authors.	Cases.	Diseased Heart.	Per cent
Andral	25	15	60
Clendinning	28	15	53.5
Hope	39	27	69.4
Burrows (case books)	34	23	67.6
Guillemin	6	4	66.6
Total	132	84	63.6

"The inference from the foregoing calculation," remarks our author, "is that in any given number of cases of apoplexy and sudden hemiplegia, no less than three-fifths will present unequivocal signs of cardiac disease, either hypertrophy, dilatation, valvular disease, or some combination of these lesions. This proportion proves the frequency is much greater than is commonly supposed, even by those who admit the occasional influence of cardiac disease in the production of apoplexy and hemiplegia. On the other hand, it is fair to state, that M. Rochoux has come to a different conclusion. After citing the opinions of Corvisart, Bricheteau, Ravier, and Lallemand, in favour of the connection between apoplexy and hypertrophy of the heart, M. Rochoux states, that out of forty-two cases of apoplexy, which he had examined prior to 1818, three only presented hypertrophy of the heart. In reply to this calculation. I would state, that upon referring to the accounts of thirty cases of apoplexy observed by M. Rochoux, and detailed in his work, it appears that the state of the heart was examined into only fourteen times; and that in four of these serious changes in the muscular or valvular structure of that organ were discovered. Thus, if the simple statement of M. Rochoux be taken, it would appear that in cases of apoplexy the heart was found hypertrophied in the proportion of 3 : 42, or 1 to 14; whereas, if the more correct calculation be made, the proportion of diseased hearts in cases of apoplexy examined by M. Rochoux, ascends to 4 : 14. Although that average, obtained from the analysis of the cases reported by M. Rochoux, is less than that given in the foregoing table, still it must be borne in mind, that lesions of the heart were not so easily appreciated prior to 1818, as at the present time. It is necessary, also, to remark, that this author restricts the term apoplexy to those cases where there is rupture of the proper tissue of the brain followed by hemorrhage; and that he excludes from this category those cases described by Abercrombie and others, under the title of 'simple congestive apoplexy.' To such varieties of the disorder he applies the term 'coup de sang,' and admits that the state of the heart exerts a very great influence in the production of congestion of the blood-vessels of the brain, although very little upon genuine apoplexy—i. e. cerebral hemorrhage If this admission be taken into the calculation, it is probable that the average obtained from M. Rochoux's cases would not have materially differed from tha given in the table."

Dr. B. examines next, the question as to which of the lesions of the heart is most likely to give rise to apoplexies and sudden hemiplegia; and from the result of his observations, concludes that hypertrophy with valvular lesions, or these affections of the heart combined with disease of the cerebral arteries, are, one or the other, most frequently found in fatal cases o apoplexy. To show the relative frequency of these several cardiac lesions in cases of apoplexy and sudden hemiplegia, Dr. B. gives in the following table the analysis of 25 cases recorded by Andral, and 34 cases taken from his own case books.

	No. of Cases.	Heart Diseased.	Hypertrophy with Valvular disease.	Hypertrophy, (simple.)	Valvular Disease.
Andral	25	15	9	4	2
Burrows	34	23*	10	6	6
Total	59	38	19	10	8

In regard to the period of life most prone to apoplexy and hemiplegia, Dr. B., after deducing various calculations drawn from different sources, and presented in a tabular form, remarks that

> "The first general inference from these tables is, that the relative frequency of apoplexy steadily increases from 20 to 80 years of age; and the second, which is more remarkable, is, that the actual number of apoplectic cases increases in each successive decennial period upwards, from 20 to 70 years of age, while the numbers living gradually diminish. The original statistical researches of Dr. Clendenning upon the heart and other viscera, forming the Croonian lectures for 1838, will afford some interesting points for further comparison with the results of the previous table. This physician ascertained, by a series of extended observations, that the force of nutrition of the heart increases as life advances. This is proved by the increasing average weight of the heart, so that in estimating hypertrophy of the heart, some allowance must always be made for the age of the individual. From this writer we learn that hypertrophy of the heart is a change concomitant to that period of life when apoplexy is most prevalent.
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> "Hence, then, the frequency of apoplexy in advanced periods of life, the usual co-existence of hypertrophy of the heart at the same period, and the ascertained tendency of cardiac disease to produce hypertrophy of the brain, are facts which, when taken in conjunction, confirm the conclusions arrived at in the previous part of the section, namely, that the coincidence between apoplexy and diseases of the heart is something more than accidental."

In the fifth section Dr. B. presents some observations on the treatment of apoplexy and hemiplegia. He points out the importance of posture in emptying the vessels of the head both external and internal, and the necessity of attention to the state of the heart, before the question of large abstraction of blood is decided upon.

When no cardiac disease is discoverable, or only simple hypertrophy without notable valvular disease, depletion both general or local, may, according to Dr. B., be carried on so far as the cerebral symptoms appear to call for that kind of relief; but if, upon examination, the existence of valvular disease to the extent of obstructing the circulation through the cavities of the heart be detected, the pulse will be a most deceptive guide as to the propriety or impropriety of abstraction of blood. If it be the mitral valve which is principally implicated, allowing of regurgitation from the left ventricle, the small and irregular pulse would probably dissuade from that free abstraction of blood which the cerebral symptoms might require; if the aortic valves be found diseased to the extent of not only obstructing the onward current of blood, but also of allowing regurgitation into the ventricles, during its diastole, there will probably be associated with this lesion hypertrophy of the left ventricle.

> "Here will be observed a full and vibrating or thrilling pulse, but a pulse of increased action without real power, and hence a deceptive pulse; and one which if it be regarded without reference to the structural changes of the heart, would invite to a more copious abstraction of blood than was called for by the general

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* In one case there was simple dilatation of the cavities.

symptoms. In each of these last-mentioned cases greater relief to the symptoms will be obtained by a free local abstraction of blood from the vicinity of the heart (either by cupping from beneath the left mamma, or between the left scapula and spine), than by a much larger depletion by venesection."

When with the indications of serious valvular disease of the heart there is well-grounded suspicion that an osseous deposit has occurred about the valves of the left ventricle, in the coats of the ascending aorta, and, in all probability, in the tunics of the arteries within the cranium, in such cases an accidental congestion may have been followed by extravasation of blood, and thus have arisen the most common symptoms of apoplexy. Here the copious abstraction of blood should be abstained from, notwithstanding the fullness and hardness of the radial pulse.

In cases of apoplexy and hemiplegia complicated with dilatation of the cavities of the heart and extensive emphysema of the lungs, the appearances of extreme congestion and dyspnœa might tempt a resort to large depletion, and thus the very conditions of the heart which have induced the cerebral congestion and apoplectic symptoms would be aggravated. In these cases Dr. B. suggests cupping glasses to the nape of the neck or between the scapulæ, with the internal administration of stimulating diuretics, diffusible stimulants, and the application of rubefacients to the sternum.

"In cases of apoplexy, about two or three days after emergence from the coma, and recovery from the depletion practised during the fits, we often observe the patient's face to become flushed, the scalp hot, a frowning or knitting of the brows, slight strabismus, and complaint of pain on one side the head. This pain is usually referred to the temporal, parietal, or occipital region opposite to the paralyzed limbs,—and if the patient be deprived of the power of expressing his sensations, his uneasiness is often indicated by the occasional movement of the sound hand to the forehead." "At the same time, the circulation, which had been much enfeebled by the remedies employed during the fit, becomes more active,—the patient is thirsty, and is sometimes troubled with an oppressive heat of the surface of the body."

"These symptoms, which are indicative of inflammatory action commencing around the clot of blood in the brain, may generally," according to our author, "be controlled in a most striking manner by small local depletion from the temple or mastoid process on the side opposite to the paralysis,—by the application of cold to the head, and by the administration of purgatives, by restricted diet, and by extreme quiet in the sick room."

When the heat of the head is diminished, he has found a blister applied near the occiput to afford great relief to the oppressive headache. When the patient is not of a very advanced age, nor extremely exhausted by depletion, great benefit, Dr. B. observes, will be derived from the administration of one grain of calomel every six hours; allowing it to act as a purgative, or to slightly affect the gums.

At the same stage of the disease the paralyzed limbs are not uncommonly affected with involuntary movements which usually consist of spasmodic contractions, either tonic or clonic. The patient will now most probably complain of severe pains in the palsied limbs, and of burning heat in them, so that he will long to plunge them into cold water; the integuments of these limbs often feel hot and are red and swollen.

"These wearing pains," remarks Dr. B., "are not confined to the integuments, but appear to pervade the deeper seated parts, so that the periosteum of the bone of a palsied limb will become swollen and painful. In some cases these pains have appeared to be attributable to the continuance of irritation from the clot upon the surrounding cerebral substance; in other cases there has been no evidence of cerebral excitement; but this painful state of the limbs seemed to depend upon returning functions in the nerves, and partly upon the capillary circulation in the tissues of the limb not being duly regulated by the nervous system. These pains in palsied limbs are very analogous to those which are experienced in a part when the circulation and animal temperature are returning to it after it has been benumbed by cold."

In this condition of the limbs the remedies which Dr. B. has found most serviceable, are slight local depletions from the head, when there has been any remaining symptom of cerebral irritation, combined with the application of evaporating lotions, either tepid or cold, to the affected limbs. In a few cases, unattended with headache, flushing, heat of scalp, and other similar symptoms, he has found marked relief to follow the application of leeches, and evaporating lotions or poultices to the painful limb. In some cases the redness and heat subside, but the neuralgia remains, and after continuing weeks or months gradually disappears.

> "A change in the condition of the soft parts of the paralyzed limbs now succeeds; they shrivel and waste away,—the limb becomes more or less contracted in different cases; any attempt at extension causes much pain; the limb looses its temperature readily, if exposed uncovered to the atmosphere, and when confined in bed it is often found bedewed with a warm, clammy perspiration. There is very little hope of any restoration of muscular power when such changes have taken place,—but much may be done to prevent such limbs getting worse."

Dr. B. strongly cautions against allowing patients, recovering from an attack of apoplexy, to rise too soon from bed, or to take too much freedom in exercise, mental occupation, and diet. By a neglect of this precaution a fresh extravasation of blood in the brain may be induced, productive of irreparable mischief—the head symptoms may be renewed with subsequent disorganization of the cerebral substance, or the supervention of inflammation of the brain and its membranes may be caused.

Three or four cases are detailed illustrative of the bad effects of premature exertions after apoplexy.

> "When," Dr. B. remarks, "sufficient time has elapsed from the fit to allow of a restoration of the injured cerebral substance to its healthy condition, it becomes of importance to excite the suspended functions of the nerves in the paralyzed limbs. To effect this object, the application of blisters or frictions with stimulating liniments over the affected limbs, particularly in the course of the great nervous trunks, are sometimes attended with good results. Such measures, if not directly beneficial to the palsied limbs, sustain the confidence and hopes of the patient during his tedious convalescence."

From the effects of electro-galvanism Dr. B. has not witnessed any decided good effects even when used under the most favourable circumstances. His opinion of strychnia is even less favourable than that which he has expressed respecting electricity. In some cases, he states, it does much harm by aggravating the wearing pains in the affected limbs to a much more acute suffering. Regular frictions over the surface of the affected limbs and well-devised exercise of the muscles he recommends as the best means of exciting a more active circulation in the wasted muscles and nerves of the limbs, and of renovating and invigorating the proper functions of their different tissues.

In cases of paralysis, in which there has been some idiopathic affection of the encephalon, a seton or issue at the nape of the neck may, he conceives, retard the unfavourable progress of the disease; but if, on the other hand—

> "The cerebral congestion is attributable to some of those serious lesions of the heart alluded to in the foregoing sections," then he considers "counter-irritation at

such a distance from the affected organ not only useless, but sometimes positively injurious."

Section the sixth treats of the influence of diseases of the heart in exciting functional disturbance of the brain. Dr. B. presents the detail of a number of cases of severe epistaxis occurring in chronic cardiac diseases; of epistaxis and serous effusion alternating in cardiac diseases; and cases of epistaxis and apoplexy in cardiac diseases; these cases strongly corroborate the necessity of examining into the state of the heart whenever epistaxis occurs unexpectedly in adults. This hemorrhage, Dr. B. believes, may often be considered as strictly pathognomonic of an obstructed circulation through the heart, as hemoptysis is symptomatic of tuberculated lungs, or intestinal hemorrhage of an indurated liver.

Dr. B. notices next a class of cases marked by a variety of cerebral symptoms, of which the most prominent is *headache*, and where the primary disease, or cause of these symptoms, is hypertrophy of the heart. He refers also to the fact that mental disturbance is often produced by chronic cardiac disease.

The whole section is replete with useful practical hints calculated to lead to the better understanding of the pathology, and the more successful treatment of a very common class of obscure or intractable head affections.

The seventh and last section is devoted to a consideration of affections of the brain and spinal cord depending on acute diseases of the heart. This subject is illustrated by the details of sixteen cases of acute cardiac disease, some of which were marked with all the usual symptoms of inflammation of the brain and its membranes; others simulating mania and dementia; others characterized by apoplectic and epileptic symptoms; others with well-marked symptoms of tetanus and trismus, and others, again accompanied by symptoms of aggravated chorea and hysteria.

After an analysis of these cases, Dr. B. remarks—

> "From the foregoing analysis it is evident, that an early diagnosis of the cardiac affection is a very important element to ensure a successful termination to th case. It also appears that the plan of treatment, which alone was attended wit success, consisted of a combination of general and local depletion, with the application of blisters to the cardiac region, and the free use of calomel combined wit opium."

Dr. B. is strongly in favour of depletion from the region of the heart b cupping glasses applied between the base of the left scapula and the spine or by leeches applied near the left mamma, in cases of acute rheumati pericarditis; after which, there is no remedy upon which he places mor reliance than a blister over the cardiac region. In all cases of pericarditis excepting in patients affected with tubercular disease of the lungs, or i the very anæmic or cachectic, he employs mercurial preparations as freel as in acute inflammations of other parts. He administers a few large dose of calomel, varying from five to ten grains, combined with a grain of opium and then continues half the dose of the same combination at moderate intervals, until the urgent symptoms abate, or the mouth becomes distinctl affected by the mercury. He sometimes, although rarely, orders mercuri inunction, together with the internal administration of the calomel.

We have met with few works which have interested us more than th one before us, and we strongly recommend it to our readers as one replet with hints calculated to lead to still further advances in the patholog diagnosis, and treatment of diseases of the brain, as well as of a large clas of affections vaguely described as nervous or spinal.

D. F. C.

ART. XVII.—*Outlines of Naval Surgery.* By JOHN WILSON, (D.) Surgeon R. N.; Late Surgeon H. M. S. Vanguard. 12mo. pp. 134: Edinburgh, 1846.

SURGEON JOHN WILSON in this small book has little to say on the subject of surgery as the word is commonly understood; under this term he includes nautical medicine. Strictly speaking, there is so little peculiar in the practice of surgery on ship-board, that the principles of military surgery are as applicable to the navy as to the army. Perhaps the naval surgeon exercises his profession with fewer advantages than the medical officer of the army, and is more frequently driven to expedients for the accommodation and comfort of his patients than the military practitioner on shore.

The volume is divided into four parts: the first treats on the examination of seamen and on medical surveys; the second, on preparation for battle; the third, on prophylaxis; and the fourth on fevers. The work is badly written, and the value of its contents, which are really practical, scarcely redeems it from entire condemnation. But as this journal is widely circulated in the navy, and as the subjects may be novel to very many readers, it is thought expedient to bestow on the volume a much more extensive notice than its merits can claim for it.

The ultimate object of all arrangements on board of ships of war is to do battle successfully. As space is limited, it is important that every part should be turned to the best account, and none but able and efficient individuals should be permitted on board. Besides the secondary duty of managing the sails, &c., seamen are required to perform the more essential service of working the heavy guns, and of using the musket and cutlass as occasion may require. The number of men allotted to ships of war is based on the weight of metal, caliber and number of guns which constitute her armament; and has no direct reference to the dimensions of her spars or sails. Therefore, cæteris paribus, the warlike efficiency of the ship is in direct proportion to the corporeal strength or health of the individuals composing the ship's company. To manage efficiently a long forty-two pounder gun, the weight of which is about three tons, requires a crew of sixteen able-bodied men and one boy; and a long thirty-two pounder, fourteen men and a boy.* As the guns on both sides of a ship are not usually fought at the same time, the number of men is estimated for one-half the guns only; so that a ship armed with one hundred long forty-two pounders would require eight hundred men and fifty boys to man her batteries. When the guns of both sides are fought at the same time, it becomes necessary for the men, reduced one half in number at each gun, to unite their force "to run out the gun" at the port-hole. Therefore, when a ship is compelled to fire from both sides at the same time, her crew fights at considerable disadvantage.

It must be perceived, that it is very important that each gun's crew should be composed of able-bodied men; if feeble, or sickly, the efficiency of the gun is proportionately impaired.

For reasons of this kind, although not stated by him, our author very properly recommends that every surgeon, on joining a ship, should carefully inspect the crew, and cause those he may find unfit for service to be exchanged for healthy men. “From rendezvous establishments, guard-ships, and such like, come the bulk of chronic cases, of constitutions shattered or undone, or subjects who are unfit, who in their examination have been only glanced at, or glossed over by those who were little interested, or were in this matter in a manner wholly unconcerned.” Surgeon Wilson does not dwell on the subject of inspecting recruits, nor does he refer to the excellent volumes of Henry Marshall, Deputy Inspector of Army Hospitals, “On the enlisting, discharging, and pensioning of soldiers,” and his “Military Miscellany; comprising a history of recruiting in the army,” works which should be carefully studied by medical officers both of the army and navy. Exposed to disease from vicious habits and poverty, as those men are, who form the classes from which men-of-war’s crews are obtained, it requires some judgment and considerable knowledge to select from the mass only those who are efficient. The surgeon of a rendezvous has a most important, responsible, and often difficult duty to discharge; for carelessness on his part may not only affect the honour of his country’s flag in the hour of trial, but involve his government in the expense of feeding and paying men unable to make a proper return in labour for what they receive.

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* Totten's Naval Text Book.

> “From the general constitutional condition of the men, will the character of the ship be formed, or according to the state and nature of the one, will be that of the other;—she will be happy, healthy and effective, or sickly and disunited,—the character of the compound whole, being the necessary consequence of that of the ingredients acting.”
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> “Life at all times is uncertain, but particularly at sea. Sailors soon put on the symbols of age. Manhood, or the meridian of life with them, is soon over. Fo action or sea duty, youth is the period. The serviceable or really working perio of a sea-going seaman’s life is about twenty years—from twenty to about forty.
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> “Under twenty, sailors are soft and unseasoned; beyond that, they become more firm and more seasoned; but at, or about forty, begin to break down. Complaints with them become much more frequent, and much more unmanageable they become rheumatic, asthmatic, stiff in their joints, sullen, and very often discontented,—the consequences of privation, broken rest, exposure, and a life har spent.
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> “The race of sailors is by no means tall,—they rarely reach six feet,—the majority of them being of the middle stature, from five feet four to eight. Sailors i their nature are thoughtless, indifferent about the present and equally so abou the future, loose in their attachments, witty, shrewd, regardless of danger, fond o change.
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> “The duties of a ship at sea are active. For this, men are required who ar young,—duties which to the feeble, or those in years, are unsuited.
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> “The congregate body of an efficient sea-going crew, should be in manhood—two-thirds between twenty and thirty, and one-third above. Among seame newly raised, the inspection or medical examination must tend, not only to th constitutional condition of the individual, but to age and stature. A man may b sound, but still, from the smallness of his frame, or natural inability, useless in large ship. In large numbers, a few individuals of this description would probably be but little felt, but in a small crew most seriously, or if numerous, even i a large one. With the rate of the ship, or the weight of the sails and guns, th strength of the crew must at all times correspond; large ships require large robus men, small ships those more light.
>
> “With every care, men damaged in character or constitution will creep into al ships, arising from the natural obscurity of chronic disease or concealment.”

The author is probably correct in his estimate of the moral qualities o sailors; but these qualities are not necessarily derived from their vocation they carry these attributes with them from the land to the sea, which is mos generally chosen by the thoughtless and by those who are “regardless o danger." A very large proportion of the seamen in our navy first see the ocean after they are of a legal age, when the moral character is already fully formed. There is nothing connected with life at sea which necessarily leads those who pursue it to be immoral, reckless, drunken, or heedless. Unfortunately for the class of sailors, it is too common to regard the navy as a proper receptacle for the turbulent and dissolute; and, through the mistaken benevolence of law-officers, our ships of war often contain men whom the laws of society condemn to penitentiaries.

The examination of recruits, for the purpose of ascertaining their physical ability, devolves on the surgeon, and should be conducted in private. The recruit should be entirely naked, that the surgeon may have a full opportunity to inspect his form and its defects, if any exist. With a view to insure uniformity in the decisions of the surgeon in his examinations, they should be conducted according to some rule; for instance, let him look to the general figure; then the head and the senses; chest, abdomen, groins, genitals, and anus; and lastly, the extremities and joints. By observing some method of the kind, the surgeon will be less liable to pass men labouring under serious defects, such as hernia, fistula, defective vision or hearing, &c.

From crowding and bad ventilation in ships, from broken rest and exposure to the vicissitudes of weather and change of climate, the proportion of sick in a ship's company may be stated in round numbers to average five or six per cent. According to the "Statistical Reports of the Health of the British Navy," every man is on the sick list once in every eight and a-half months, and the annual decrease in the mean strength of a squadron from invaliding and deaths, is at the rate of about fifty per thousand, or five per cent. on all stations. About the same proportions may be stated for the navy of the United States. In this view of the subject, it is very important that all members of a ship's company should be in vigorous health at the time of embarkation for distant service, that the expenses incident to sending invalids home from remote stations may be spared, and that the reduction of the ship's force may be avoided as much as possible.

If the inspection be carefully conducted at the rendezvous, on board receiving vessels, and again after the men join the vessel in which they are to serve, cases for invaliding will be rare. The inspection of recruits is surrounded with difficulties: the recruit is always anxious to pass inspection, and, if really unfit, will resort to every means to deceive the surgeon, and may conceal defects from him. A moment's reflection will satisfy any intelligent member of the profession, that an external examination of the body, unassisted by information from the individual being examined, will not enable us to determine certainly, the physical ability of a man: it is even more difficult to determine that a man is sound, from simple personal inspection, than to decide on the soundness and qualities of a horse without trial. Therefore, to protect the interests of the government, by excluding unfit men from the naval service, and from improper claims for pension, it becomes necessary to examine a recruit a second time on board of a receiving vessel by another medical officer before the enlistment is complete. Instances occur, in spite of this care, where men are passed by two medical officers, with hernia, fistula, and old strictures of the urethra, and other affections which escape detection. Such recruits, when called upon to labour, speedily complain to the surgeon of the vessel, and make known their infirmities. Such instances are not alluded to here as proof of carelessness or incapacity on the part of inspecting officers, but to show the difficulties of inspecting recruits for the navy. When men are scarce, it becomes a question, With what degree of disease or imperfection may a recruit be accepted? how far may the list of disqualifying causes be reduced, in order to supply a pressing demand for men, especially in time of war?

> "Cases of disease for survey are always occurring in ships of war, but in every one varying, and both as to number and kind. The frequency of such will vary with the youth and stamina of the crew, with the care taken in their first selection, the one being generally the inverse of the other, and with the period of the commission, the season, and climate."

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> "Assimilation to the habits and living of seamen is, at all times, gradual, and at all times, more or less, in progress, during the first year partially affected, during the second more fully, and during the third and fourth more completely.
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> "Among a body of men who are young, robust, and bred up from infancy to a sea-life, cases of disease for survey, from assimilating causes, will, in all probability, seldom occur, and not more the first than the third year. On the contrary, in crews that are young, and unused to a sea-life, or in those who are old, or worn out, cases of disease for survey will undoubtedly be much more frequent; in the first, from excitement or non-assimilation, in the last from frailty."

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> "The medical examination at first, and the survey after, are naturally counterparts or parts of the same duty, but controlling each other. By the one, all those who are unfit, will be, or ought to be, rejected or objected to, and by the other, those will be got rid of who may have escaped the first. The more closely therefore, the first or the examination is conducted, the less necessary and frequent will be the second or the survey. In both the object in view is the same. to select the serviceable, and reject those who are unfit; only that, of the two modes of procedure, the first is the more simple, the second the more complicated.
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> "Subjects more immediately calling for a medical survey are chronic cases o disease, cases that may be lingering, and such as may be incurable or doubtful Diseases are curable at a proximate or distant period or they are not. Acute disease is not generally embraced within the limits of a medical survey, such terminating too speedily in health or dissolution.
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> "In a sea-going ship, the duties necessarily incurred are active, urgent, and under any circumstances, must be performed. In all ships there must and wi be sick, cases of disease, both acute and chronic. The strength of the ship, an the length of the sick-list are naturally inverse, or the longer the latter, the weake and more crippled must be the former.
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> "In acute cases of disease, there is always some prospect of a terminatio either in the return of a patient to health or dissolution. In chronic cases it i otherwise. In them the termination may be distant or doubtful, or there may b no prospect whatever.
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> "In a sea-going ship the duties are active, important, and must be performe and either by the parties themselves whose duty it is to perform them, or by som others, when necessary, in their stead. In all cases, the length of time for a sence from duty must have a limit, and will necessarily vary with the nature of tl disease, the probability or improbability of a cure, and the nature of the duties r quired.
>
> "Some cases brought forward for survey, as phthisis, paralysis, or dropsy, a clear, or at once made out, and no delay necessary. Others, as rheumatic, hepati dyspeptic cases, are less obvious or more obscure or doubtful, and more time consideration required. In sea-going ships, however, to absence from duty the must be a limit. Here all duty is important, imperative, and, by some one other, must be performed. If a case, whatever that may be, should still be linge ing and doubtful, and, notwithstanding all the remedies that may have been employed, at the end of six weeks or two months, and particularly in an individu known to be of a thorough bad character or constitution, it may be considered th a fair one for survey.

"Officers are more wanted, and more important than men—their duties more urgent and more responsible, therefore can be less spared—and an earlier decision, therefore, in their case must be come to, but resting always on the nature of the case and duty; for instance, farther trial of what may be done, or a longer probationary period, may be granted to a marine officer or chaplain, whose duties are not so urgent or onerous, provided the case is doubtful or not incurable, than could be reasonably allotted to an executive officer, purser, or surgeon, whose duties are more urgent, more personal, and must be performed."

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"A medical survey may be plain or it may be exceedingly difficult. In phthisis, paralysis, hernia and such like, there is commonly no difficulty, but rheumatic, hepatic, chronic cases, are often difficult to unravel or tangibly detect.

"In a clear case, where the disease is obvious, the officers surveying may at once, from the appearances before them, decide, but in a doubtful chronic neuralgic one, the business in general is much more difficult and complicated. Symptoms then are not so prominent, striking, or characteristic. To unravel or make out tangibly, the character of the case, or the man, circumstances or symptoms, in all their bearings, must then be considered.

"If the man, the object of survey, is damaged in his character, and on this much will, in all cases, depend, if dissipated, quarrelsome, or, whenever he can, a skulker, or if the evidences of disease are not so tangibly developed as to make the case clear, and all should depend on his own statement, the case then may be considered doubtful or suspicious. and may be prudently, if it is desirable, deferred; but on the worth of the man and his previous character, much will depend.

"If the man should be useless, discreditable, or old, his discharge from the ship may be desirable, but if young, of a previous good character, and an acquisition, the disease being at the same time doubtful, more time may be given. Something more of the nature of the case or man may be drawn out, or the disease yield.

"Disease may be real or it may be feigned. Cases of both occur among seamen, but which time and observation together will in most solve.

"In naval medical surveys there are always one of two objects in view,—entire removal from the service, or a change of climate, and to both surveys abroad refer. On foreign stations cases of disease for survey are of two kinds, the one considered curable by change of climate, the other incurable. In the first are included all cases of functional disease, in the other, those involving morbid deposit or change of structure.

"On some constitutions climate acts severely. In young, sensitive, and unseasoned subjects, or new comers, through the influence of climate, excitement in the latent constitutional germ is induced, and with that morbid action. In men of moderate habits, and used to a sea life, the influence of climate is always least felt, or by them best resisted."

When it is probable in any case, in the opinion of the surgeon, that an officer or man cannot be restored to a condition for duty within a reasonable period; or that change of climate and removal to better accommodations than the ship affords, are essential to restore health or save life, it is his duty to request "a survey," or medical council. The case is then examined by the officers of this board, and the captain of the vessel or commander of the squadron disposes of the individual in conformity to the recommendation of the surgeons. It sometimes happens in the British navy that "surveys" are resorted to for the purpose of getting rid of inefficient, or worthless, or querulous officers and men, even when the health of the individual is of the smallest consideration. Superior officers are sometimes detached in this way, unnecessarily as far as health is considered, to make way for the promotion of favourites in a squadron. In the navy of the United States this may happen, but we have heard of no instance of the kind.

Surveying officers should carefully consider the interests of the government, of the ship or service, and of the individual. But they must be wary that an individual, and especially if an officer, whose private interest requires him to return home, or who is discontented or love-sick, does not impose upon them his moral pains as bodily infirmities.* They must consider too, the harmony and well-being of the ship, and rigidly weigh how far it may be expedient to yield to the desires of the peevish and useless members of the ship's company, which may be more efficient when unwilling labourers are withdrawn. Setting aside individual interests, it should be constantly borne in mind that the object of a survey is to preserve the efficiency of the ship, by enabling the commander-in-chief to remove the infirm and substitute the robust in their places; his authority for this purpose depends very much on the opinion expressed by the surveying officers.

Naval surgeons of the United States are frequently assembled to survey officers and men to determine in what degree a permanent disability entitles them to a pension for hurts received while acting in the line of duty. The surgeons are called upon to determine whether the disability be permanent, and whether a man is totally incapable of contributing to his support by labour, and consequently entitled to a full pension, or whether he be able in part to support himself, and, therefore, entitled to three-fourths one-half, or one-fourth pension. Where an individual has totally lost hi sight, or lost both arms, the case is plain; but it is not always easy to determine what amount of pension, if any, should be granted, for the loss o a finger or toe, or for an injury impairing in some degree, without destroying, the use of an extremity. In the cases of common seamen and marine who may claim pension for wounds, it is believed the interests of the government as well as of humanity will be best served, by acting on the mos liberal view the case permits; but in the case of commissioned officers i receipt of pay, the most rigid construction of the pension laws should b closely adhered to, particularly for small injuries. There is an instance o record of a commissioned officer receiving, during more than twenty year an annual pension of three hundred dollars, on account of injury receive in battle, which in a small degree impaired the use of a thumb, althoug for a greater part of the time, he received the full pay of his grade. As fa as the duties of his office were concerned, the injury occasioned, in fac no disability whatever; had he been a common seaman, however, the di ability would have been serious, perhaps sufficient to prevent him fro discharging the duties of his vocation. When a seaman claims a pensio for any disability sufficiently great to preclude his admission into the nav service, or from exercising his profession on board of a merchant vessel, h case is entitled to the kindest consideration by the surveying surgeons in such a case they would be justified in awarding a full pension, (six do lars a month,) although they might justly deserve censure, should the grant any pension whatever to a commissioned officer on full pay, labouring under precisely the same degree of corporeal disability.

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* Examples of officers of rank feigning illness are not wanting, and they shou not be forgotten. Charles, Duke of Bourbon, Constable of France, wishing to des the emperor, "feigned sickness in order to have a pretence for staying behind "Hotspur's father, old Northumberland, lay crafty sick to avoid the battle of Shrew bury. Essex, the favourite of Elizabeth, is said to have feigned a violent disease move her compassion; and Raleigh pretended madness, sickness, and a variety diseases, to protract his examination and procure his escape. Gustavus Adolph IV., of Sweden, was mean enough to simulate a wound of the leg."—See *Gavin, Feigned Diseases.*

It may be proper to go behind the letter of the law, and recur to the policy or motives of its enactment, to enable surgeons to determine the degrees of disability in the variety of cases presented for their examination. A pension should not be regarded exactly as a substantial evidence of the government's sympathy, for the bodily suffering or inconvenience sustained by an individual in its service, but as a charitable provision, made for those who are unable to obtain the necessaries of life without assistance, in consequence of disability sustained for the sake of the country, which disability they probably would have escaped had they not exposed themselves in the employment of the government.

It is to be presumed that, in the United States at least, the system of pensions for those hurt in the public service was, in a measure, designed to encourage men to expose themselves to the chances of war, by securing subsistence to them if maimed, or to their widows, if killed in the line of duty. The object was to secure them against want, and as far as possible remove all pecuniary anxiety in event of mishap. It was presumed that few men would expose themselves to the hazards of battle, while it was sure, if they should leave the navy disabled, they must depend for sustenance on begging in the streets, or become messmates with paupers in some almshouse.

Under this view of the case, unless we accept Dr. Samuel Johnson's definition of a pension, viz., "an allowance made to any one without an equivalent. In England it is generally understood to mean pay given to a state hireling for treason to his country:"—Under this view of the subject, it is questionable whether commissioned officers while receiving a salary are entitled to any pension. It may be urged, however, that notwithstanding the officer receives his salary without performing duty, he ought to receive some compensation for the permanent inconvenience he suffers in consequence of a wound or hurt, especially if the wound be of such a nature as to probably shorten his life. The same argument is equally applicable to the common sailor or marine; and on this ground it might be argued, that the pay of the sailor should be continued, as in the case of officers, and that a pension should also be granted as a compensation for personal suffering and inconvenience.

Under whatever aspect the subject may be viewed, it is very certain, under the same circumstances, the common sailor or marine has greater need for a pension than the commissioned officer. In determining the degree of disability in the case of a sailor, surgeons should satisfactorily answer the question: To what degree is the claimant incapable of obtaining a livelihood as a sailor? They have no just plea for deciding that although incapable of getting subsistence as a sailor, he may maintain himself in some other pursuit, or to resort to an extreme case for illustration, that although disabled as a sailor, he may thrive by street-begging, and is, therefore, not entitled to a pension. The surveying-surgeons are no more warranted in deciding that a seaman shall engage in a new vocation, than they would be in the case of a commissioned officer.

Surveying-surgeons should bear in mind that in all cases, whether for pension or invaliding on a foreign station, the individuals surveyed naturally endeavour to exaggerate their disability, although at a rendezvous the same individuals would strive to make light of any slight disability which might be observed by the inspecting-surgeon. They are bound to keep the interests of the service constantly in view, and never sacrifice them to the selfishness or particular benefit of individuals, whether the case be one for enlistment, invaliding on a foreign station, or for pension. It is their duty to protect the treasury, consistently with justice to individuals, and to the service, from all unnecessary expenditure.

The second part of Surgeon Wilson's volume is devoted to "Preparation for Battle."

> "Battle, however disagreeable or painful to contemplate, is the aim or object of a ship of war,—her duty when called for. It is the test which will infallibly try her. It will try her character, her crew, her discipline; it will try the skill of the most skillful, the valour of the most brave. For such an event all must be prepared, and at all hours and seasons, for come it will without doubt, in some shape, and at some time, while nations and human nature continue."
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> "During battle, the cockpit, or place allotted for one, is the receptacle for all who are unable to go to quarters, or hurt or wounded. * * * For a surgical operation, the cockpit, or place allotted for one, is not the most eligible; but, under all circumstances, at the time the best. For the reception and relief of wounded men, much, both in action and previous preparation, becomes necessary. Under any circumstances, and even the best regulated and prepared, duties of the description here referred to are always onerous and trying.
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> "In war, where all is uncertain and sudden, nothing should ever be left to chance. Suddenly, or unexpectedly, or at night some conflict may take place, but which it is the duty of every person to be prepared for. To a lubberly, careless, or unprepared ship, the first salutation from the enemy may be a broadside, and the cockpit become rapidly filled with wounded men. For emergencies of this nature, everything and every one, in a ship of war, ought to be prepared,—there ought to be nothing at such a moment ever wanting or to be looked for.
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> "The importance, onerous nature, or responsibility of medical duty during battle, can never, by any one, it is imagined, be questioned, embracing, as it does, death and wounds in every shape, limbs lacerated or torn off—wounds from musketry or splinters—bayonet or cutlass wounds, everything, in short, appalling or horrible, and all, probably, in a few minutes, in the midst of bustle, the noise of guns, a close atmosphere, and what renders all still more embarrassing, candlelight, and through heat and closeness in tropical climates, still more grievously augmented. In obviating inconveniences about the cockpit, much, however, by a previous, medical, methodical arrangement, may be effected, and both for the comfort and convenience of those wounded, and that of the medical attendants."

Of the importance of preparatory arrangements for battle, a notion may be formed from the rapidity of the events which cause officers and men to require prompt medical assistance. On the 1st of June, 1794, the Queen Charlotte, a three-decked ship, under command of Admiral Lord Howe, engaged the Montagne, a three-decked ship, commanded by the French Admiral Villaret, and in an action of twenty minutes, 100 were killed and 200 wounded on board of the latter ship.

In the battle of the Nile, August 1st, 1798, there were killed and wounded on board the French ship of the line Guerriere, from 350 to 400 men, in three hours.

About midnight, March 1st, 1799, the British frigate Sybille engaged the French frigate Forte, and after an action of one hour and forty-five minutes, of 370 on board the Forte, 65 were killed and 80 wounded; and of 370 on board of the Sybille, 5 were killed and 17 wounded.

On the 1st June, 1813, the British frigate Shannon engaged the United States frigate Chesapeake, and after an action of fifteen minutes, of the 330 men on board of the Shannon, 24 were killed and 59 wounded; and of 386 on board the Chesapeake 47 were killed and 99 wounded.

In an action of half an hour between the U. S. frigate Constitution and British frigate Guerriere, 14 were killed and wounded on board the former, and 79 on board the latter.

In the action between the U. S. frigate United States and British frigate Macedonian, of little more than an hour, on board of the former there were killed 5, and 7 wounded; and on board of the latter, of 300 men, 36 were killed and 68 wounded.

The action between the U. S. frigate Constitution and British frigate Java continued about two hours. On board the former 9 were killed, and 25 wounded, and on board of the latter 22 were killed and 102 wounded.

In an action of fifteen minutes between the U. S. sloop Hornet and British sloop Peacock, there were 4 killed and 33 wounded on board the latter, and on board of the American ship 1 killed and 2 wounded.

In an action of 43 minutes between the U. S. sloop Wasp, and British sloop Frolic, there were killed and wounded on board of the latter between 90 and 100, and on board of the former 10.

These examples are sufficient to show how arduous must be the labours of naval surgeons in battle, and how important it is they should be fully prepared at all points.

The arrangements of the cockpit, or place used for the same purpose, must be anticipated as far as possible before the ship leaves port. In ships of the line and frigates, an *operating table* should form part of the furniture of the cockpit. It may be so contrived as to serve for the accommodation of the cockpit-mess in ordinary times, and of the medical officers during battle. A table ten or twelve feet long by six or seven broad, having eight drawers arranged in two rows on each side, to contain the surgeon's armament should be provided. The drawers should be distinctly labelled, so that their contents may be known at a glance. For instance, a drawer, labeled 1, surgeon's instruments; 2, senior assistant surgeon's instruments; 3, junior assistant surgeon's instruments; 4, tourniquets; 5, muslin or calico, flannel, lint, &c.; 6, rollers, tape, &c.; 7, sponges, adhesive plaster, &c.; 8, sundries. A contrivance of the kind indicated would embrace, in a small space, everything necessary for rendering immediate assistance to wounded men.

As the cockpit is totally dark at all times without artificial light, lanterns should be provided and kept constantly in their places, ready to *light up* at any moment: of course proper hooks for their suspension must be fixed in the cockpit before going to sea.

That there may never be a deficiency of *water* for the wounded in time of need, two or more casks should be kept in the cockpit, always full, ready for action; the casks should be furnished with proper cocks, and be distinctly marked with the word "Surgeon," or other suitable means taken to prevent the chance of want of water for the recently wounded, or for operations.

Buckets and *swabs* should form part of the cockpit furniture; and *sand* should be at hand for sprinkling and drying the deck. In a sea-way it renders the footing more firm, and assists the medical attendants in their movements and work.

Before leaving the dock yard, the *sick cots* should be inspected to be certain that the frames or stretchers fit, that none of the parts are wanting, and that they be of proper size,—that is, not too large, as economy of space must always be studied in all matters connected with a ship of war.

When men are wounded aloft, they become helpless themselves, and a hindrance to those about them. *Topslings* of canvas, or of rope, large enough to fully envelop a man's body and sufficiently strong to bear the weight, should be provided, one for each top, so that all who may be disabled aloft may be at once sent down to the cockpit.

Means should be provided also to relieve the cockpit of the presence of those whose wounds have been dressed. *Platforms* arranged in the *tiers* of ships of the line would answer; but hooks or battons for slinging cots in the same part of the vessel would serve the purpose equally well.

When the ship clears for action, the *Sick-Bay*—that part of the vessel where the sick are usually accommodated,—like other parts, must also be cleared. The bottle-frame should be closed up at least, if not removed to guard against the chance of fragments of glass, and corrosive or inflammable liquids from being driven about by the enemy's shot. For this reason the bottle-frame should be movable.

When an engagement is about to take place, the surgeon should furnish the captain of each top, and of each gun, three or four *field tourniquets;* it is presumed they have been previously instructed in their use by the surgeon on occasions of "exercise at general quarters." The cockpit is to be lighted, and the drawers of the operating table should be examined to ascertain that everything which may be required, is present and ready for use. Much will depend on the care the surgeon has taken in procuring his supplies before putting to sea, so that, in fact, preparation for battle forms an important part of the surgeon's duty from the hour he joins the ship. He should not forget that boat expeditions are not unfrequent, and that these must be provided for. "A boat expedition is always in its nature uncertain both as to the distance to be gone, the success and return, all depending on winds, weather, locality, and on the skill and character of the officer commanding." A portable box, covered with canvas to protect its contents from damp, should be prepared, containing in a small space instruments and dressings: a shoulder strap, to facilitate its transportation in case of landing, should be attached.

In the bustle of battle, attention to slight injuries, such as involve no danger, may be deferred in favour of those cases which are serious. "It would be unreasonable or unjust to trifle away time at such a moment with cases of no importance in the face of others more urgent or pressing."

In cases of fatal injury, something may be done to palliate the condition of the dying man, by placing him in an easy position, or the exhibition of an opiate or stimulus.

Hemorrhage is undoubtedly the most alarming and urgent symptom presented to the surgeon during battle. Where the bleeding is serious, everything must be set aside till the vessel be secured. "A general or superficial oozing of blood from a wounded surface may not be, among a number of others more urgent, immediately pressing; but bleeding from a wounded artery will at once demand aid." In some cases immediate operation is indispensable; in others it may be delayed.

> "Nervous concussion, or derangement, marked by sinking of the pulse, cold sweats, and syncope, is often simultaneous with, or immediately consequent to, severe or extensive gun-shot injuries. If such is nervous only, and does not depend on hemorrhage, in all probability it will be transient and pass off. If from the loss of blood, the case then will be different: and probably lasting and fatal."

Preparation for battle does not consist solely in the arrangements of the cockpit, nor in providing instruments, dressings, &c., for the wounded. Naval surgeons begin to prepare for battle in the medical schools; for, unless they be professionally competent, well instructed in the principles of medicine and surgery, instruments and appliances will be of little avail to the wounded. During a naval engagement, there is nothing to substitute in the cockpit of a frigate for coolness and sound professional knowledge. Ignorance at such a time, in spite of the best intentions, must prove fatal to many whom surgery might save from death. On such an occasion a skilful surgeon is a blessing and a hope; but an ignorant one is a curse, an ally to the enemy.

It is important not only that the surgeon should be well qualified, but the assistant surgeons and subordinate attendants should be well trained, docile and obedient, and be, as it were, imbued with a common motive of action. It sometimes happens that assistant surgeons, although well educated and in spite of passing a rigid examination with distinction, are, in fact, very inefficient or even useless, from an over, or misappreciation of their personal dignity. There are some who leave the schools and carry into the naval or military service, a notion that it is derogatory to do anything which may soil their hands; and consequently, they frequently direct subordinate attendants to do what should be done by their own hands.

Speaking of army hospitals, the late Dr. William Ferguson (Inspector-General of Military Hospitals), says, in his "Notes and Recollections of a Professional Life"—

> "The position of the young physicians, meanwhile, was both pitiable and ridiculous. Divested of the pride they had imbibed at the universities, they might have made excellent hospital assistants; and, from their high general education, would have been deserving of every promotion the rules of military service—which in due course of time they would have come to grace and elevate —could permit. Their station in society, too, proclaimed them to be a class far superior to what the army had commonly received; but as physicians, setting aside their utter ignorance of diseases at so early an age, more especially military ones, they were *far too fine for common use.* To one of them I was attached in the first campaign. He could read Hippocrates in the original Greek, but he did not know the grain scales and weights when he saw them; and to have touched a bleeding wound, even while the sound of the cannon was booming in our ears, would have been to lose caste. He was my superior by at least four degrees of military rank, but I had to teach him what I myself was taught in the early days of my apprenticeship. With an apothecary, an assistant, a nurse, and a clerk in his train, he might have made a routine book prescription, in classical Latin, (for what young inexperienced physician ever makes any other, unless by chance,) out of the military medicine chest; but had the ingredients of his own prescription been put in his hands, he would have known as much about them as if they had been sent from Timbuctoo. He had worn a cap and gown at Cambridge, but it is not to be supposed that he had ever entered an apothecary's shop, or contaminated his hands with drugs either in bulk or detail. In fact, no medical officer should be tolerated in an army who cannot, like the man of Ross, 'prescribe, attend, the physic make and give.' He must be a man of all work to have any business there; but to have placed such men over the heads of all who were experienced in military medicine and diseases, while he was not fit for any work, was as stupid and gross an abuse as could have been imposed on an army. The assumption, the affront to every principle of service, was monstrous, and shows to what extent university and corporate pride will proceed, when unchecked by wise regulation and military rule."

The information of medical officers of the navy should not be limited to the science of medicine and surgery, as taught in the schools; but their hands should be practically educated in the application of dressings, and in putting up prescriptions in a neat and artist-like manner. They should also possess a knowledge of accounts, so that they may never be at loss in computing the expenses of their charge; or experience any difficulty in ascertaining the correctness of bills they may be called on to approve for payment. This is essential to the efficient discharge of a surgeon's duty in the navy of the United States, especially when the surgeon has charge of a large hospital establishment.

The third part of our author's volume is devoted to prophylaxis, or the means of preventing disease on board ships of war, in which ordinarily there are many causes of disease always active. Cleanliness of the ship and of the persons composing the crew; clean and well-aired bedding; clothing suitable to the climate; dryness and proper ventilation of the vessel; food and drink of proper quality and in sufficient quantity, and temperance in the use of alcoholic liquors are essential to a healthy ship. On all these points the surgeon should be capable of giving proper advice.

> "*Temperance.*—Few vices are more ancient, more extensive or ruinous, than drunkenness, the root of evil, misery and disease; and to ruin or a premature grave has consigned thousands. Among the seamen of every nation the propensity to intoxication is strong, the bane of the profession, the rock on which thousands split. In a profession, girded or beset with so many perils, the danger of drunkenness to all must be manifest. Intemperance among a ship's company is very soon manifested, by their appearance, by that of the ship, by the absence of cleanliness, by that of comfort, and by the general prevalence of crime. It is manifested also by the amount of punishment, and the length of the sick list. A drunken or dirty ship, it is here maintained, never was, nor ever will be healthy. And what is more, never will be efficient. The amount of punishment, and the length and strength of the sick list will, in most, tell, or form an index, not far from the truth, of the state of the ship, of the state of discipline, of that of organization, of the character of the officers, or that of the crew. On seamen drunkenness acts twofold—directly, by falls in board, by falls overboard; by the commission of crime or the general omission of duty; indirectly, by inducing morbid action, fever, hepatitis, dropsy."

Of the general truth of these remarks there is no question; and Congress could in no wise contribute more to the health and efficiency of our public ships than by abolishing the spirit ration in the navy. The opinions of a majority of the best officers in the service are in accordance with this view of the subject. Mutiny, crime and punishment, in nine cases of ten, have their origin in the grog-tub.

It is a practice with some of our commanders to restrict the crews of their ships too much in the allowance of fresh water; a practice exceedingly baneful to health, leading, as it very frequently does, to scurvy, which, under ordinary circumstances, may always be avoided in our ships. We are aware of no instance of scurvy attacking seamen who have a full allowance of wholesome water. Too much attention can hardly be given to this subject; we are not sure that, where scurvy makes its appearance in a public ship, the commander and surgeon ought not to be brought before a court of inquiry, to show that the disease had its origin in circumstances entirely beyond their control. Scurvy is the result of defective nutrition, and, when it occurs, may be generally traced to a deficiency of water and bad quality of the articles composing the ration. As a general rule, the commander may be charged with neglect of duty, when he permits bad provisions, or a short allowance of water to be served to the crew.

It should be borne in mind that salt does not absolutely prevent meats from spoiling, but merely retards the progress of decomposition for a period. For this reason, the more recently meats have been "put up," the more nutritious and the more wholesome they are. It sometimes happens that our ships leave port with provisions which have been already one or two years in salt. In the course of time, old salted beef undergoes a change, becomes hard, and almost as destitute of nutritive qualities as mahogany, and hence the vulgar name of salt-junk (anglice, old rope salted,) given it by seamen.

"By salt, climate, and keeping, the nutritive principles, or the gluten and albumen of meat and bread become decomposed; new combinations and new bodies forming, solid, fluid, and gaseous, with a diminution in the volume, as well as the quality of the article. Beef loses most, pork much less, by keeping the nutritive or gelatinous, albuminous, fibrinous principles of the meat being decomposed, forming with salt and with each other, compounds soluble or insoluble, leaving in meat, long kept or long salted, little remaining, save a carneous mass, indigestible, innutritious, and dry.

Under the influence of heat and dampness, bread soon deteriorates on board ship, becoming light, friable, honey-combed, crumbling to pieces under the fingers, and abounding in weevils and maggots. Various plans have been adopted for the preservation of this essential article. Under the direction of a chief of the Bureau of Provisions in the navy department, attempts were made to preserve bread by packing it in barrels with small bags of pepper, and of camphor; but at the expiration of a few months, as might have been anticipated, the bread was found to be camphorated, or peppered so as to be uneatable, and in other respects not better preserved than that which had not been drugged or spiced.

"For the accumulation and decomposition of matter, few places are more favourable or fitted than a ship's interior, divided, or partitioned off, as it is, and necessarily must be, into numberless apartments, hidden, shut and stagnant. In a temperate and cold climate, the want of cleanliness, discipline, or organization, may be for a time, as it often is, harmless, or without anything morbid immediately resulting; but send a ship of this description to a warm one, the East Indies, or coast of Africa, for instance, and then observe her,—matter heretofore quiescent, would then, through heat and moisture, begin to act, or to assume, in some form, life, and new bodies, with new properties, be evolved, with disease."

Our author urges the importance of keeping the interior of ships clean, dry and thoroughly ventilated, in order to guard against disease. On this point we will permit him to speak for himself; these extracts from his work will enable our readers to perceive that, although somewhat observing, Surgeon Wilson's style is far from being creditable to him, and is scarcely redeemed by the matter he communicates.

"In investigating the source or cause of disease among seamen, it is not to the upper parts or works of the ship we are to look, which are necessarily exposed, and through exposure harmless, but to the deeper and darker, or those parts which are shut up, damp and stagnant holds, store-rooms, magazines, or all under hatches.

"From the outer aspect of a ship, much may be learned of the interior, or what is within—or from what is seen, of what is not. A slovenly, neglected, dirty ship or crew, will nine times in ten be the same within. A ship, however, may be clean, painted, and polished without, or about her upper works, but still ill-conditioned, or ill-ventilated below—a more common, a more deceiving, therefore a more dangerous case. In every search after the cause or source of disease among seamen, we must look, therefore, not to the upper, or exposed parts of the ship, but to the interior, or to all those under hatches.

"The accumulation of matter, the source of decomposition, germination and disease, may take place in the holds or limbers, or in both. The holds may be cleared, washed, white-washed and ventilated; yet, if the limbers be not opened and cleaned, nothing may be gained.—The limbers of a ship it may be necessary to say, are two in number, one on each side of the keelson, and unless the ship be bottle tight, (a rare phenomenon,) moist.* Over, or on these limber boards, rest the whole contents of the hold—water—stores provisions. Into these hollow ways or limbers, then, water, and however introduced, from all parts of the ship's bottom trickles, finding its way by descent at length to the pump-well. Water, unmixed with other matters, may in the limbers, be harmless; and, undoubtedly in a cold climate often is so,—but, mixed up with debris, animal or vegetable, in a hot one, and particularly in a close bottomed ship, often the source of disease.

"Ships are sweet or foul, in proportion to their leakage—open, leaky ones, being generally most sweet, and those that are close, or tight-bottomed, foul or fetid. The state of the limbers, or inferior interior parts, may be in most in a great measure, gleaned from that of the water pumped up, being copious and clear in the former, and fetid or foul in the latter. In hot climates, and close-bottomed ships, water, in the limbers and pump-well, termed bilge water—through seclusion, stagnation, and matter, very often becomes fetid, and very soon offensive. On the state of these parts (holds, limbers and pump-wells), in all ships, and all climates, much, and not easy to say how much, the health and comfort of the crew, or all will depend, and much more than is commonly imagined or thought of.

"Example is better than precept—more forcible and more lasting. Some years ago, it is believed somewhere about the year 1826, the Pyramus, a frigate, was employed on the West India station. After being for some twelve, or perhaps more months there, the crew, after having been all previously healthy, became suddenly, and, without any obvious cause, attacked with fever. From the very first onset, the disease betrayed itself as violent, phlogistic, and intractable, and very soon alarming; and what was the worst feature of the case, no reason could be given. There were some points, however, which, although material, appear to have been overlooked in this case, bearing immediately on its nature and cause. The disease, for instance, was limited to this ship; no other in the squadron had it at the time, therefore it could not have been an epidemic. It was uninfluenced in its violence or virulence, by change of place, or the disease was the same at sea as in harbour—therefore the cause, whatever it was, must have been in her, or carried about with her, or endemic. A great number of the crew both officers and men, were attacked, and died, and, without any distinction as to rank or age, or whether they had lived and slept on board or on shore, indicating that the cause, whatever it was, was indigenous, or in the ship. In this disease were exhibited all the symptoms of the most virulent tropical endemic. In a short time, half, or perhaps two-thirds of the crew were attacked, disabled, and laid up.

"This ship, like many others, was clean in her decks or upper works, clean where it is not of much consequence; but, as it proved afterwards, unwholesome and pestilent below—a fallacious—a too common—a very dangerous case. After various speculations as to the nature and cause, and antidote to the disease, and, after the loss of much time, and both officers and men not a few, it was then resolved, as it ought to have been at the first, to clear and clean the ship.

"With this view the frigate was taken to Antigua. At first, in clearing out the holds, nothing was discernible calculated in the least to elucidate this subject, al seemed as it should be, and had the search gone no deeper than the holds and pump-well, and that was possible, the cause would probably have not been ascertained. The limber-boards, however, were taken up, and then the cause of the disease came into view. In and throughout the limber spaces, was found accu mulated, and that to a very considerable amount, matter, black, blue and putrid, both animal and vegetable, and of all colours and stages of decomposition. From all parts of the limber spaces issued, and with noxious ebullition, gases sulphuretted, hydroguretted, or virulent. Of those persons who were employed in this duty—all, or the greater number of them, were attacked with fever,—some died, and some with very great difficulty recovered."

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* The angular spaces, bounded by the keelson and bottom of the ship, and intersected by the floor timbers and ribs placed at right angles with the keel, are called the limbers. There is one on each side of the keelson, running its whole length. In order that water may freely flow fore and aft, holes are cut through the timbers near the keelson; these are termed limber-holes. The plank which covers the timbers on the inside of the vessel, and lies nearest to the keelson is termed the "limbe board;" it is not usually nailed. In some vessels a chain or a rope (called limbe rope) is kept passed through all the limber-holes from stem to stern, for the purpos of keeping these holes free from obstruction, by accumulations of solid matte Limber chains or ropes are now obsolete.

About the year 1827, in the month of June or July, the U. S. sloop John Adams was at Matanzas. Fever attacked the crew, although there were no cases of fever at the time on shore, or on board of the U. S. sloop Hornet, then lying in the harbour. The John Adams went to Pensacola, and the origin of the disease, in the opinion of the medical officer, was traced to the foul condition of the hold. After the lower parts of the vessel were thoroughly cleansed, no new cases of fever occurred among the old crew, but about twenty out of forty men transferred from another ship were attacked.

The U. S. frigate Macedonian was fitted out at Boston in the winter season and sailed on the 2d of April, 1822, and arrived at Havana on the 28th of the same month. Ten days afterwards a case of malignant fever occurred on board and terminated fatally on the third day. The ship went to sea on the 4th of June, having lost seven of her crew. It appears there was no fever prevailing in the town or on board of other vessels in the harbor at the time. Captain James Biddle says, in his report, believing the disease had its origin in the climate, "It was of course a just expectation, that on quitting the port the condition of the crew, in respect to health, would have become ameliorated. Yet, to my great distress, this was not the case; and although the weather at sea was unusually fine, the people were taken down with fever in the most surprising manner."

It appears that of the 376 persons, officers and men on board, 101 died of fever between the 11th of May and 10th of October, a period of five months. The surgeon and the assistant surgeon were ill at the same time, and the former died, and thirty-five men perished without any medical advice, owing to the illness of the medical officers.

Captain Biddle, as well as the surgeon of the ship, attributed the fever to the foul condition of the lower hold. He stated that when the Macedonian "was last commissioned, *a part* of the ballast was taken out and landed; and for the purpose of ascertaining if the keelson was cased, the *ballast immediately on each side of it* was moved. All the ballast was completely covered with black mud and dirt, and so hardened together, that it was a work of much labour to separate the different pieces of iron. The quantity of mud taken from the ballast that was moved, was so great, that Midshipman Gerry informs me he saw two cartloads of it carried from the wharf. Mr. Doggett, the gunner, acquainted me that the water casks of the ground tier were immersed in mud to about a fifth of their height; and this extraordinary accumulation of mud is to be explained by the extraordinary fact, that on the return of this ship from the Pacific, the hold was not broken out; and that as respects the hold she was laid up in ordinary nearly in the condition in which she arrived from sea. Midshipman Turner acquaints me that he was stationed within the navy yard last winter; that the firewood he used was taken from out of this ship, and that when ignited it became so offensive that he was unable to remain in the room. Thomas Pewmont, a seaman on board, informs me that he was employed in the Boston Navy Yard last summer; that in September last, some gang casks were taken from this ship for the United States' brig

Spark; that this ship's hold was at that time extremely offensive, and that there were in it several casks of salt provisions in a rotten and putrid condition. Pewmont also states, that this ship had not been pumped out for upwards of two months; that it then took half a day to pump her free; and that the water discharged from the ship was horridly offensive.

"The sickness and mortality on board have been greatest among the persons employed in the hold, and among the carpenter's crew, who, by working the pumps, were most exposed to the offensive bilge-water discharged from the ship.

"With all the means in our power, such as ventilation, white washing, fumigation, fires, and letting water into the ship, we have been able but partially to correct the impure and offensive air emitted from the hold."

Captain (now Commodore) Biddle's report, charging neglect on those officers who fitted the ship for sea, caused a court or board of officers to be assembled to inquire into the truth of the allegations. The statement by Captain Biddle was substantially corroborated by the testimony adduced; although no blame was attached to the officers under whose direction the ship was prepared for sea, the evidence shows that notwithstanding the usual steps were taken, a very considerable part of the hold had escaped cleaning for more than three years. The severity of the weather was probably unfavourable to this kind of work; and everything being frozen, it is probable there were no odours indicating a foul condition of the hold. It appears before the court of inquiry that, at Havana, the temperature was usually about 86° F. on the gun-deck, but probably ranged somewhat higher on the birth-deck and inferior parts of the vessel. On one occasion, under these circumstances, Captain Biddle compelled the whole crew t sleep on the birth-deck, with the air-ports closed, as a means of detectin some one of the crew who had committed the wicked and treasonable ac of cutting the breeching of one of the guns. The punishment was mos severe, but, in a military point of view, possibly not too great for the offence The crew were forced to exert themselves daily in practising the maneuver or exercise of the great guns, even after the appearance of the malignan fever on board. Notwithstanding, it was clearly shown to the court tha Captain Biddle was always solicitous for the health of his crew, and resorte to various means to secure this important object.

Let us, however, extract from our author some other facts bearing o the point under consideration.

"Of accumulations within the limbers, the Pyramus was a sample. The fo lowing, of that without:—In the year 1817, and for about a year before that, th Pique, a frigate, was employed on the Jamaica station, and had generally durin that time been healthy. Catarrhal and synochial cases, from solar exposure, atmospheric changes, or some indiscretion, as in most ships had occasionall occurred, but nothing diffused or malignant. About July, of that year, the shi was ordered to Vera Cruz, and up to her arrival there, it must be remarked, w in her ordinary state of health. At this place, cochineal, a very decomposin substance when wet, was taken on board, in considerable quantity, in raw untanned hides, in open boats, and in close rainy weather, and wet or soake and softened as it was, stowed below in the after hold and spirit room. The ten perature at this time ranged from 80° to about 100°. Except on duty, none of th crew ever landed, and only during the day, and all, except a very few of th officers, always slept on board. Eight or ten days after leaving this place, an while at sea, fever suddenly and unexpectedly, and without any apparent caus broke out, and soon become general. Men in good health, and all ages, beg to be affected, were suddenly and unaccountably attacked with headache, fev and delirium. At all hours, to our surprise, applications for assistance began be made, and in a few days the main-deck of the frigate, usually clear, becam through increasing numbers, everywhere crowded with hammocks, cots, and sick men, and the sick list averaging in general from about eight or ten, mounted rapidly to forty, fifty and sixty.

"What then was the cause? became the first and important question. Discipline, system, temperature, were all the same they ever had been; therefore it could not reasonably be imputed to them. No other ship in the squadron was attacked in the same way; therefore the disease was not an epidemic.

"On reaching Port Royal harbour, the holds were cleared, but not on the score of health, to get at the cochineal and other matters. From all parts, fumes, fetid and offensive, issued, and which for some time had been felt. The bales of cochineal at the bottom, which had been wet at first, through heat and confinement, it appeared, had become putrid and decomposed. The holds were cleaned, washed, whitewashed and ventilated, and the disease ceased.

"The following, also, is one of accumulation and morbid formation without the limbers, of a nature different from the preceding:—The Salisbury, a two-decked fifty gun ship, during 1817, and for a year or two before that, bore the admiral's flag at Jamaica; she had always been looked on as a clean and healthy ship, Febrile cases, from irregularity, exposure to the sun's influence, as in all ships, had occasionally occurred, but nothing general or diffused. About the middle of 1817, she was ordered to the Spanish Main. In the neighbourhood of Portobello, a flat marshy tract, she watered and wooded, taking on board a large quantity of green, soft, rank and vegetating, cut from the forest around, and either during, or soon after the rainy season. Two or three weeks from this, being then in Port Royal harbour, cases of fever began to appear, spread, and in a very short time became general, and particularly among such as slept below, in cabins, tiers or cockpits.

"During the progress of this malady, a very great proportion, probably half the crew, became affected. Of these many died, and many with difficulty recovered, and without any respect as to age or habits. Among the gun-room officers, or midshipmen, who slept in the cockpit, it spread, and most severely; some died and some recovered with difficulty; but it must be particularly remarked, and worthy of notice, no case occurred with the captain and wardroom officers, who all, at that time, slept on the main-deck. This was no temporary attack,—it lasted two, three, or more months, and one, two and even three dying daily. What was the cause? became again naturally the question. The disease existed in no other ship at the time; therefore it could not be an epidemic. Did it proceed from locality, as in the Pheasant and Phœnix? Was the germ its cause, inhaled at Portobello and evolved at Port Royal? It certainly would appear not, because those who had been on shore, and those who had not, became indiscriminately the victims. Did it originate in the ship? To this several circumstances concur. In the first place, it was general only in this ship, and particularly among such as slept or lived in or about the tiers, cockpits or lower parts. In the second place, cases of fever continued to occur, not only among such as had been on the Spanish Main, but among new men, (as it happened with Mr. Saunders, the pilot, in the case of the Eclair, who had embarked at Plymouth,) who had volunteered, or were drafted afterwards from other ships. Was this infectious? Here, again, it appears not; no restriction was ever imposed or thought of in this instance, and no case was ever transmitted out of the ship, or to any of the medical or sick attendants.

"What then was the cause? is still the question. It was clearly, it would appear, something in the ship, and something placed there, either previous to quitting Port Royal harbour, or after. For the first, no reason whatever could be supposed, as the ship, up to the time of her leaving, had always been healthy. It was not until she had quitted, or was about to quit, the Spanish Main, and had taken on board green, rank and vegetating wood, that she became unhealthy. It is particularly to be remarked, that this wood was not dry, inert or deadened, as it ought to be, to fit it for a ship's hold, particularly in a tropical climate, but full of sap, capable, when subjected to stagnation and a high heat, of life and germination, or the evolution of noxious gas."

These examples are sufficient to show the very great importance of keeping the limbers and holds of ships perfectly clean, and free from all substances liable to easy decomposition by moisture, heat and confinement. A great deal of filth often collects in the spaces of the ribs, between the outside planking and internal skin or ceiling of the vessel. Lately an improvement has been made in our ships of war, by leaving out a large part of the ceiling, so that the timber-spaces can be readily reached and thoroughly cleaned. It would be far more beneficial to bestow attention and labour in keeping the hidden parts of vessels pure, than to devote so much time in polishing the iron and brass about the decks. "Bright work," however agreeable it may be to the eye, is not always a sure indication of a perfectly clean ship; belaying pins, and rails may shine, and the upper decks may be dazzlingly white, while the limbers, pump-well, and holds are filled with pestilence and death.

On board of ships of war it is too common a practice, or rather it was the practice, to deluge the decks in water daily, without regard to weather or other circumstances. We are informed that the birth-deck of one of our sloops of war was daily wet, although the water froze as it fell, and scrapers were necessary to remove the ice; and at the same time, the deck was crowded with the hammocks and cots of men labouring under pneumonia and pleuritis. The surgeon protested in vain; the first-lieutenant insisted on the importance of scrubbing the deck daily in spite of every argument.

The fourth part of Surgeon Wilson's volume is devoted to the consideration of tropical fevers. He is a non-contagionist, and contends that the African marsh fever is neither infectious nor contagious. Alluding to the case of the Eclair steam-vessel, on the coast of Africa, in which 65 died of 145 persons on board, he expresses an opinion that the disease had its origin in the vessel, and was not brought on board by a single person as asserted in the newspapers. However, it is not our purpose to pursue the subject.

Our object has been to present such an outline of the cares and duties which devolve on medical officers in the navy, as would indicate how valuable the science of medicine and surgery may be in the service of the government; and show the necessity of bestowing the greatest care in the selection of medical men for the navy. Surgeon Wilson truly remarks:

> "It must be obvious to the most superficial observer, to the merest tyro, to every one at least, acquainted in the slightest degree with the nature and duties of ship of war—*health is power;* without it, no ship and no fleet can be efficient; and what are ships, what are fleets, it may be here asked, in sober reason, withou efficiency? What are ships, built after the most approved models, guns cast on the most improved calibre, without efficient men, (not with men laid up with feve or scurvy, as in former days they used to be,) without men in health, without men able to work and fight them? Let him who can answer, tell. It is the bravery of her seamen, not the model of her ships—for they seem to have sailed as fas formerly as now—that has made Great Britain what she now is. And what, o where is bravery,—it is here repeated, without health? they are co-existent an inseparable; no man can be brave who is laid on a sick bed,—hence the impor ance of the subject at present under discussion. It is the bravery, and, consequently, the health of her seamen, it is here contended—and let him deny it wh can,—that has made Great Britain what she now is, that has made her flag brave for a thousand years, the battle and the breeze, and makes her now ride Quee among the nations."

To prevent feeble and sickly men from being imposed on the governmen for pay and subsistence, the surgeon must exercise his professional discrimination at the rendezvous. To maintain the strength and efficienc of the ship's company, the surgeon should be ready, not only to prescribe for those who may be sick or hurt, but to point out the best means of preserving health under all circumstances on board. The surgeon must be ever ready to provide for the wounded in the hour of battle, and to succor all, even when panic-struck by an epidemic, in the time of need; and to him the government looks to guard the treasury from improper claims for pensions, or respite from active duty.

Surely the duties of a naval surgeon demand for their proper and efficient discharge, sound intellect, varied intelligence and a high degree of professional acquirement. To secure men possessing all these qualifications is not less the interest of the officers and men in the navy than of the government; but disguise it as we may, the fact is that the importance of a highly educated medical corps is not universally appreciated in the navy of the United States. The temptation of high pay is not offered; even a defined position relatively to others in the service is denied, and until very recently, assistant surgeons were berthed and messed, and classed, with "school-boy midshipmen" of fourteen years of age and upwards. Still they seek a defined relative rank, that the military community of which they are essential members, may know how to respect their rights and privileges as educated gentlemen.* The surgeon in the navy of the United States is called upon to be content with a moderate pay, and the silent approbation of his own conscience, while he often labours hard, and shares the perils and privations of naval life, without any prospect of the honors, rank, promotion or reputation which inure to officers of the line. On occasions of ceremony, he may find himself preceded by a midshipman; and last, though not least, as indicative of the appreciation in which his professional services are held, the law makes him share prize-money with the boatswain, carpenter and sailmaker. Truly, we should be humble, and set less value on the profession which wise legislators have determined is deserving of no better reward for exposure in battle than the craft of a sailmaker or carpenter. The members of the profession generally should take the matter into consideration and use their influence to place their professional brothers in the military service of the country on a proper footing.

W. S. W. R.

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* Since this article was in type, the Hon. George Bancroft, late Secretary of the navy, has issued a "General Order," assigning a relative rank to medical officers.

BIBLIOGRAPHICAL NOTICES.

ART. XVIII.—*Animal Chemistry, with reference to the Physiology and Pathology of Man.* By Dr. J. FRANZ SIMON, Fellow of the Society for the advancement of Physiological Chemistry, &c. Translated and Edited by GEORGE E. DAY, M. A., and L. M., Cantab., &c. Philadelphia, Lea & Blanchard, 1846: pp. 295–717: 8vo.

IN a former number we noticed the first part of this work, and an attentive perusal of the present and larger portion of the work confirms the opinion then expressed of its great value in the elucidation of many intricate questions connected with physiology and pathology. Animal chemistry is still in its infancy, and although much has been done in it, within the last few years, a vast field is yet open to the observer in this department of scientific inquiry. Enough, however, has been accomplished to enable the practitioner to perceive that the various changes in the composition of the animal solids and fluids; some arising from normal and some from pathological causes, are to be accounted for, in a measure, by the aid of chemistry. It will, it must be admitted, to use the words of the author, "require an immense number of analyses to ascertain these modifications, to express them in definite terms, to connect them duly with functional disturbances in the organism, or with other symptomatic phenomena, and finally, as far as possible, to endeavour to discover their origin."

The present work is of much importance in facilitating these researches, as it not only is a record of what has hitherto been done, but points out the best modes of carrying on the investigations, and the probable connection between various diseases and certain modifications in the composition of the different fluids and solids.

This part opens with a consideration of the secretions of the chylopoietic viscera and the theory of digestion, noticing the chemical composition of the saliva, bile, gastric and pancreatic juices, both in a normal and diseased condition, and their action on aliments, followed by a consideration of the process of digestion; this latter the author is of opinion, is mainly attributable to the action of pepsin, a free acid, and a suitable temperature, as from recent experiments it has been shown that alimentary substances are dissolved as rapidly in an artificial digestive fluid consisting of pepsin and a properly diluted muriatic acid, as in the gastric juice itself.

He next takes up the subject of milk, and after alluding to its composition, shows that it is much affected by temperament, nutrition and disease, so as to act in an injurious manner on the child, even where the nature of the change cannot be determined. The subsequent chapter on secretions of mucous membranes is of much interest in a practical point of view, as it points out the best methods of distinguishing pus or purulent mucus from pure mucus, in the expectoration of persons suffering from diseases of the respiratory organs. Passing over the chapters on sweat, fat, &c., we come to the most important portion of the work, that on the urine. From its great length and the copiousness of its details, it is impossible to present even an analysis of it in a notice of the character of the present, but it will amply repay an attentive study, and proves most clearly that the profession has neglected this source of diagnosis, and suffered it to fall into the hands of ignorant empirics. Although it will require a long series of observations to perfect what has been so ably begun by Dr. Simon, he has fully shown that there is scarcely an abnormal change that occurs in the fluids of the body, that is not followed by some characteristic change in the urine. As respects the kiesteine in the urine of pregnant women, after noticing at some length the experiments of Dr. Kane published in this Journal in 1842, he shows that the formation of this pellicle, although generally indicative of pregnancy, is not always so, as it has taken place in the urine of women who were not impregnated, is not uncommon in amenorrhœa, and even occurs in the urine of males.

The chapters on feces and vomiting are of much less interest, as is also the case with those on the bones, cartilage, muscle, &c., but that on concretions is highly valuable, as it points out the composition of vesical and renal calculi, the best methods of ascertaining their character, even by persons little skilled in chemical manipulation. The work concludes with a short view of the fluid products of disease, and an appendix containing further analyses of many substances previously mentioned.

Such, in a few words, are the subjects treated on by the author, and it will be perceived that he has occupied a wide field of observation, and it is much to be regretted that his untimely death prevented us from profiting by the extension of his researches so ably commenced. His observations, as now presented, are calculated to lead to very important results, and throw much light on many of the most obscure departments of physiology, and we feel satisfied that they will tend to encourage a taste for a science, from whose cultivation and development the medical art will derive the utmost benefit. R. E. G.

ART. XIX.—*Fifth Annual Report of the Registrar-General, of Births, Deaths, and Marriages, in England.*

IN a bibliographical notice of the above-named work, formerly presented in this Journal,* we promised to enter into some examination of the letter of Mr. Farr, the able statistician, which accompanies, and greatly enhances the interest of the Registrar-General's valuable publication.

In the appendix to the first report, noticed in this Journal for October, 1842, (vol. iv. p. 426,) the proportion of deaths in towns and the open country, was a subject of investigation, and the much higher rate of mortality in towns referred to. The inquiry at that time necessarily left some uncertainty in the results, since it was founded upon the returns of half a year, and the population could only be estimated on an assumed rate of increase. The census taken subsequently furnishes a mass of facts which afford more ample means of determining the influence of the density of population on the causes of death. For the sake of comparison with the appendix of the first report, Mr. Farr takes the same districts and pursues the same order.

He informs us that the country population in 1841, of the districts in the counties of Essex, Norfolk, (except Norwich,) Suffolk, Gloucestershire, (except Bristol and Clifton,) Herefordshire, and Westmoreland, an area of about 9,352 square miles, was 1,700,484. The deaths registered in the four years, (1838–41,) were 132,116.

The town population of Birmingham, Aston, Bristol, Clifton, Manchester, Salford, Liverpool, West Derby, Cambridge, Carlisle, Derby, Dudley, Exeter, Leeds, Liecester, Maidstone, Newcastle-on-Tyne, Sunderland, Northampton, Sheffield, Stoke-on-Trent, Wolstanton, and Wolverhampton, covering 666 square miles, was 1,883,693; and the deaths in four years 205,966.

The population of the town being greater than that of the country districts, as a correction of this excess, Mr. Farr strikes off 20,000 from the deaths in the former districts, and makes the mortality in the same time and out of the same population 132,116 in the country districts, and 185,966 in the towns, showing an excess in the latter of no less than 53,850 deaths.

In another statement he includes the mortality of London, inhabited, in 1841, by the enormous population of 1,875,493. The deaths in the metropolis are compared with those in the South-Western Division, comprising, in Wiltshire, Dorsetshire, Devonshire, Cornwall, Somersetshire, a population of 1,740,017. The deaths were 189,927 in the metropolis, and 130,298 in the South-Western Division; and after the same kind of correction as before, the result is of the same character, the deaths being in the same time, (4 years,) out of the same number of inhabitants, 130,298, in the rural, and 176,210 in the metropolitan districts.

The excess in the London mortality amounts to 45,912. Taking the same population, a greater number died in 3 years in the metropolitan districts than died in 4 years in the south-western districts. If the mortality were reduced to the same rate, there would be 13,700 less funerals in the metropolis every year.

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* See Amer. Journ. of Med. Sciences, for Oct., 1845, p. 390.

By combining the two series of observations just noticed the following aggregate numbers are obtained:—

Deaths in the same time (4 years) out of the same population 262,414, in the country districts, and 362,176 in the town districts. Difference, 99,762.

During the 10 years which embrace the 4 years included in this calculation, the annual increase of population was 2 per cent., in the town, and only 8 in the country districts. One in 52 died in the country, 1 in 37 in the town districts. The mortality in the dense districts was to that in the less dense districts as 140 to 100.

Mr. Farr presents tables constructed to show the causes of death in the country and town districts. From these it appears that the deaths by diseases of the zymotic class were 86,835 in towns, 45,114 in the counties; and the annual mortality was 6013 and 3422 in a *million* living. "By small-pox the mortality was twice as great in the town as in the country districts (1045 and 507); 8348 persons died by this disease in the '25 towns,' (so they may be called for shortness,) and 6739 in the metropolis, 3844 in the south-western division, 2834 in other counties. The mortality (in a *million*) by *measles* was 914 in the town districts, 364 in the country; by scarlatina (including putrid sore throat) 988 and 478; by hooping-cough 829 and 415. Thus 8465 (children chiefly) died of *measles* in the '25 towns,' 2774 in the south-western division, 4729 in the metropolis, and 2021 in the 'eastern, &c., counties;' 7627 died of scarlatina in the '25 towns,' and 249 in the south-western division, 6640 in the metropolis, and 3801 in the eastern an other counties. *Hooping-cough* was fatal to 11,975 in the metropolis and the '2 towns,' to 5468 in the south-western division and the other counties. *Croup* wa much more fatal in the '25 towns' than in the metropolis, while it was the revers with 'thrush;' and neither of these maladies was much more fatal in the tow than in the country districts. The mortality of diarrhœa, dysentery, and choler together, was 385 in the towns, 196 in the country. Typhus (comprising th cases returned as *fever*) was fatal to 18,111 in the town, 13,159 in the country districts: the mortality (to a *million* living is understood throughout) was 1254 an 997. The mortality from erysipelas was 133 and 53; from syphilis (as returned 18 and 10 in a million. *Twenty-eight* died of *hydrophobia* in the towns, 10 in th country districts.

"The diseases of 'uncertain or variable seat' were nearly equally fatal in th two classes of districts. More deaths were referred to scrofula and carcinoma i the country than in the town districts; 13,194 persons died of dropsies in th town, 12,040 in the country districts.

"The mortality by cephalitis and hydrocephalus together was 1143 in the tow 445 (to a *million*) in the country districts. Hydrocephalus destroyed 4409 children in the country, 12,656 in the town districts. The mortality by convulsion was 852 in the country, 2090 (to a *million*) in towns, where tetanus and chore were also most fatal. The mortality by apoplexy and paralysis, as well as th 'sudden deaths,' in which inquests were held, was not much greater in town than in the country. By phthisis the mortality was 4463 (in a *million*) in the tow 3660 in the country districts: or 64,449 persons died by this disease in the tow 48,252 in the country districts. The mortality by phthisis was raised only 22 pe cent. in the town districts; but in this destructive disease the increase produce 16,197 deaths, while the *total* deaths from typhus in towns was but 18,111, an the excess over the deaths from that disease in the country 4952. Sufficie attention has perhaps not been paid to the great excess in the mortality of consumption, caused by the insalubrity of towns. The deaths by bronchitis, pneumonia, asthma, and other diseases of the chest, were raised from 21,966 in th country to 50,609 in the town districts; the mortality was 1667 and 3504 in a million.

"The annual mortality by diseases of the *digestive organs* was 1972 (to a *million* in the town, 1042 in the country districts; but of this mortality 616 and 120 we referred to *teething*, a disproportion which, vague as the term is, serves to indicat the greater degree of irritation and danger of dentition in towns. Enteritis an peritonitis were nearly twice as fatal in the town as in the country districts. *Tabes mesenterica* was, like consumption, increased only about one-fifth in the town districts. By liver disease and hepatitis the mortality was 171 in the country, 233 in the town districts; by jaundice 55 and 57. The mortality by diseases of the urinary organs was 101 in the country, 117 in the town districts. The mortality by diabetes was the same (13); by stone and gravel 12 in the country, 16 in the towns. The excess was perhaps caused by the resort of patients to the hospitals in towns.

"Of childbirth, 3195 women died in the town, 1806 in the country districts; the excess in towns was more than 1000 lives; the mortality was 221 and 137

"The mortality by rheumatism was greater in the towns than in the country (72 and 48); so was the mortality by diseases of the joints.

"The mortality ascribed to intemperance was 19 in the town, 7 in the country districts; to starvation, 15 in the town, 8 in the country districts.

"I have pointed out only some of the more important results in the table, which should be carefully studied in all its details.

"The essential character by which we have been guided, in classifying districts under the head of 'town' or 'country,' is the density of the population, which can be expressed numerically by the 'population to a given area,' or the 'area to each person.' Whether the population possesses any privileges, is incorporated, or is under any peculiar jurisdiction; whether the place is technically a 'city,' or a 'town,' or neither, has not been considered; if the district have a considerable population, living in close proximity, it is considered a 'town' district. The Registration Districts are generally single parishes, or parishes united for the relief of the poor, and were formed by the Poor Law Commissioners with this object exclusively in view; hence the 25 town districts comprise entire parishes, which have all the character of country districts, and the municipal boundaries themselves frequently take in open suburbs and spaces. The width of the streets, and the relative area covered with dwellings, also differ in the same city.

"Upon the other hand, the 'country' districts in the table comprise all the towns in Wiltshire, Devonshire, Dorsetshire, Cornwall, Somersetshire, Norfolk (except Norwich), Gloucestershire (except Bristol and Clifton), Herefordshire, and Westmoreland. The terms 'town' and 'country' districts must consequently be understood in this inquiry to designate prevailing and not exclusive characters. The comparison is instituted between denser and less dense, not between the densest and most scattered populations in the kingdom. Assuming that the mortality is increased as the population grows denser, the mortality of the class of 'town districts' is less, that of 'country districts' greater, than it would be if the population were exclusively of the kind by which the class is characterized. The effect of the agents is understated by which the disease and mortality of towns are caused. It is as if the specific gravities of two masses of metal were compared, the one containing eight, the other two parts in ten of gold; the ratio of the specific gravities of the two masses would be less than the ratio of the specific gravities of the pure metals; but a comparison would prove incontestably that gold was by far the heaviest.

"Without any difficult analysis this broad irrecusable result is then obtained from an immense number of facts, that certain diseases are much more fatal, and that the mortality is much greater in towns than in the open country."

Mr. Farr proceeds next to inquire into the agencies leading to the production of diseases which prove so much more destructive in towns than in the country. He traces the disease of towns to groups of causes, and of these gives a partial analysis.

"Experience," he observes, "has shown that there are certain things which may be called necessaries of life: they are the produce of labour, and possess a variable value; a portion therefore of every population, savage or civilized, cannot procure them, and is subject to privation in different degrees. These necessaries are—(1.) Water (beer, wine, tea, coffee); (2.) Food (meat, bread, fruits, vegetables); (3.) Physic; (4.) Clothing; (5.) Firing (light); (6.) Lodging; (7.) Cleansing, (washing, sewerage.) The relative value of these articles is represented by their price, which varies at different times and places, but the price does not express the relative facility of procuring them, that is, of procuring, in the wide sense of the word, subsistence. The facility is expressed by the ratio of the earnings of a family to the cost of its subsistence; for if the seven necessaries of life cost 100*l.* in one place and 120*l.* in another, and the earnings are also 100*l.* and 120*l.* respectively, each family would have a competency. But competency, comforts, and the *aisance* of the French, significant as they are, cannot be expressed numerically; they may be understood differently; in a sanatary inquiry, we may, therefore, substitute for them the value of this ratio, which can be determined and expressed in terms to which all would attach the same signification. Let it be assumed, for a moment, that a sufficient supply of the necessaries of life can be procured by a family for 100*l.* a-year, what would be the effect of reducing the earnings of the family to 50*l.* a-year? We know, by observation, that it does not reduce the duration of life in that ratio; and the reason is, that by the substitution of a coarser and cheaper food hunger can be appeased, and the body supplied with sufficient nutritive matter, or matter which may serve as a substitute for those more grateful combinations, which the appetites and experience seem to point out as the best food for mankind. The animal food in the case supposed, would be replaced by bread or potatoes; the beer, tea, and coffee, would be weaker; in illness medical advice would be less frequently obtained; the clothing would be coarser and scantier; the fire smaller; the lodging less spacious; cleanliness would be less attended to. I take here the average results, which would vary in different circumstances with the desires of the people and the products of the place. A reduction from abundance to a rude subsistence would probably be attended by a reduction in the mean duration of life, but to a comparatively small extent. A low standard might, however, be fixed upon, any fall below which would be accompanied by a certain reduction of the mean life of the people."

Among other influences affecting life and health, Mr. Farr refers to those of soil and atmosphere, climate and seasons, winds, temperature, hygrometricity and electricity.

In relation to another class of agents, namely, atmospheric impurities, organic matter undergoing decomposition, and the contagious principles of zymotic diseases, our author makes the following observations:

"The atmosphere, besides oxygen and nitrogen, contains carbonic acid and aqueous vapour. The mean proportion of carbonic acid is 49 volumes in 100,000 volumes of air, according to the younger Saussure; who also states that it varies from 37 to 62 volumes. Mr. Coathoupe has estimated the quantity of air which passes through the lungs of a man of ordinary size in 24 hours at 267 cubic feet, of which nearly 8 per cent. by volume, or 21 feet, are exchanged for carbonic acid;* the bulk would be equivalent to a cube of 6·4 feet. If, for a mere illustration, we assume that on an average 16 cubic feet of the gas are thrown off from the skin and lungs of each person, 30 million cubic feet will be exhaled daily by the population of the metropolis, distributed over an area of about 1951 million square feet. Add the amount of the same gas formed by animals of every kind, —fires, lamps,—and multiply the sum by 100, inasmuch as respiration for several hours in air which contains 1 or 2 per cent. of carbonic acid has been found to produce alarming effects (Broughton), and it will be seen that the amount of air vitiated in the metropolis, by this element alone, is by no means inconsiderable.

"Is the excessive mortality, then, in towns, to be ascribed to the accumulation of carbonic acid, or of any other similar gas, which is so rare, as to be innoxious in open districts? It was natural, when it had been discovered that carbonic acid mixed in air destroyed animals, and after the accidents in mines and close chambers had been traced to this agent, to ascribe the excessive mortality of towns to the same cause. Further investigation must show, I think, that it has but a small share in raising the mortality of towns, the provision for its dispersion is so complete."

Connected with this topic Mr. Farr has communicated some facts and observations relating to the diffusion of gases in the atmosphere, of such exceeding interest that we cannot refrain from laying some of them before our readers.

"Dalton discovered that carbonic acid entered the space occupied by hydrogen in the same proportion as if no hydrogen had been present. He inferred that gases do not, like liquids, exclude each other, and this is now admitted. So that if an air-tight chamber full of carbonic acid communicate with the external air, the same quantity of air will find its way into the chamber as if no carbonic acid gas were present; and if water were introduced, the same amount of aqueous vapour would occupy the space as if neither gas were present. The elasticity and density of the atmosphere of the chamber would be the sum of the densities and elasticities of all the gases and vapours present. It has been assumed here, to simplify the statement, that while the atmospheric air entered the carbonic acid gas remained; but it would in fact go out, for the same reason that the air entered in order to set the gases without and within in equilibrium."

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* Graham's Chemistry, p. 1016.

A great deal of light has been thrown upon the subject of the rates at which gases are diffused through small apertures and porous substances, by Professor Graham, in his Elements of Chemistry. To form an idea of the dispersion of the carbonic acid gas generated in towns, according to the pneumatic law, "assume," says Mr. Farr, "that 1000 cubic feet are formed per second; it will be equal to a cube of 10 feet. Now if this volume of carbonic acid were in the centre of a vacuum, it would disperse in every direction at a velocity of 1049 feet a second. It is nearly the velocity of sound. A particle would fly a mile in 5 seconds, 12 miles in a minute. The velocity of a 'high wind' is 50 feet a second, 'a hurricane that tears up trees' 147 feet a second—one-seventh of the velocity with which carbonic acid rushes into a vacuum. If the gaseous film evolved every second over the area of the metropolis were pure air, it would only move slowly away, by the impulse with which it was thrown off, and because it was lighter than the atmosphere; but as it is carbonic acid, the surrounding atmosphere is a vacuum, into which its rush is opposed only by the small quantity of carbonic acid gas existing, and the sluggishness of the aerial particles. The rapid removal of this gas from cities is effected by a force much greater and altogether independent of the winds. It is carried rapidly through the air, until it is fixed again by vegetation and exchanged for oxygen, which flows into the atmosphere of cities, according to the same law, to replace the oxygen consumed.

"These results are confirmed by chemical analysis of the air. The differences in the quantity of carbonic acid in winter and summer, night and day, are considered by Dumas due to more of the gas being absorbed, retained, and brought down by rain in cold than in warm weather. They are meteorological changes extending over all the atmosphere. Chemists have hitherto failed to detect any excess of carbonic acid gas in cities. A commission is now sitting in Paris, engaged in the analysis of the atmosphere by Dumas' method, which is held to yield the most accurate results. I am not aware that the air of any place in England has been analyzed by the new method; but the observations in other countries show no diminution of oxygen in the city air. Thus the oxygen was to the nitrogen in the air of Paris as 230.0 to 770·0 (by weight): and on Faulhorn, in Switzerland, 8767 feet above the level of the sea, as 229·7 oxygen to 770·3 nitrogen.

"Carburetted hydrogen and sulphuretted hydrogen arising from graves are less dense, and are dispersed more rapidly than carbonic acid: scarcely a trace of them can be detected.

"Carbonic acid and other noxious gases can, as is well known, be confined for a time in well closed apartments, and oxygen can be excluded; but the dispersive force is so great that chemists have seldom succeeded in detecting any difference in the proportions of the gases, even in the air of crowded hospitals. If any difference exist it must be small, and might have a slight effect on health; but, as the experience of our collieries proves, would not raise the mortality to anything beyond a fraction of 40 per cent.; besides, the country is exposed as well as the town population to the influence of deleterious gases in the close chambers of small cottages.

"It is, then, to matters suspended in the atmosphere of cities that the excessive mortality must be referred. Smoke is heated gas, carrying with it unburnt particles in suspension; the carbonic acid is scattered immediately by its diffusive velocity, and the particles of solid matter, carried up by the heated air into the sky, disperse, become invisible, and fall around insensibly, in a clear atmosphere, or at a distance when there is any wind. If the air contain watery vesicles also in suspension, the column of smoke ascends but a little, the carbonic acid is absorbed, the carbon imbibes water and air, it mixes with the watery cloud, and all the phenomena of a London fog are produced. These fogs are caused, apparently when the temperature of the Thames is higher than the temperature of the air, which is calm (or if there be any wind it is nearly saturated), the fogs generally disappearing as the temperature of the air is raised by the sun.

"That the smoke is irritating to the air-passages, injurious to the health, and one of the causes of death, to which the inhabitants of towns are more exposed than the inhabitants of the country, is exceedingly probable; but if the effect were very considerable it would be most evident in the dense fogs, when the atmosphere is loaded with smoke, and breathed for several consecutive hours by the population—men, women, and children. Now we have never observed any connection between the increase of the mortality and the London fogs. The diseases, again, caused by smoke must be of a mechanical nature, and affect the lungs and air-passages; it may increase the pulmonary diseases, but will assuredly not produce scarlatina, measles, typhus, and other diseases which prevail in towns.

"There is another class of agents. In a school-room, say there are 100 children: a child is introduced for a few hours, in a state of scarlatina. The children have not had the disease before: 10 of them are affected. If 10 children with scarlatina were introduced, and the room were ill ventilated, 30 or 40 of the children might be affected. If, instead of scarlatina, the sick children had small-pox, measles, or hooping-cough, these diseases would be communicated. If dysentery, cholera, typhus, and plague patients are frequently introduced into barracks or workhouses, a certain proportion of the inmates are affected. The numbers who are attacked by an infectious disease depend upon—1st. The susceptibility of the person exposed (if the children in the school-room had previously had small-pox, or been vaccinated, a very small proportion of them would be infected by breathing the small-pox atmosphere); 2dly, on the strength of the zymotic matter, which varies in the stages and forms of the several diseases; and 3dly, on the density and ventilation of the room. If 100 healthy were placed in a room in immediate contact with 10 sick persons, if the room were small, the doors and windows closed, the greatest number possible would be infected; and if they went through the disease in the same circumstances, the mortality would also be the greatest possible. So if public buildings, in which crowds of people assemble, were well supplied with pure air, it would be quite safe to resort to them; but as opera houses, theatres, concert rooms, lecture rooms, Exeter-hall, chapels, churches, and large workshops, are not yet provided with the proper mechanical means of ventilation, and the air is not withdrawn, the very walls reek, when filled with the breathed atmosphere; and if any epidemic, such as influenza, be rife, several persons affected with the complaint are present, and great numbers are infected; the headache and oppression which come on are the first and often not the last symptoms. This is literally 'taking poison;' but it is generally called 'taking cold,' through the common prejudice of ascribing all our maladies to sensible causes. It is a vulgar error to suppose that rooms are healthy when they are not hot; but the heat which is generated may increase the effect of the zymotic matter.

"Certain substances, then, taken from the bodies of the sick, produce, when introduced into other bodies, a series of specific phenomena, developed according to a determined type: *Varioline* (small-pox matter), for instance, produces small-pox. These substances have the same relation to diseases as ferments have to well-known chemical processes. Several of them will float in the air, and form a morbid atmosphere, the density of which will be in proportion to the proximity of the bodies by which it is given off, and to the greater or less facility for escape. The 267 feet of air passing through the lungs daily, if charged with these particles, will bring them into contact with the blood.

"What are the physical properties and chemical nature of these morbific particles? Chemistry has left us much in the dark; but, until English chemists enter seriously upon the investigation of this subject (which is of inconceivable importance), we may accept the well-supported hypothesis of Professor Graham:—

"'Of the odoriferous principles of plants, the miasmata of marshes, and other matters of contagion, the presence, although sufficiently obvious to the sense of smell, or by their effects upon the human constitution, cannot be detected by chemical tests. But it may be remarked, in regard to them, that few or none of the compound volatile bodies we perceive entering the atmosphere could long escape destruction from oxidation. The atmosphere contains, indeed, within itself the means of its own purification, and slowly but certainly converts all organic substances exposed to it in simpler forms of matter, such as water, carbonic acid, nitric acid, and ammonia. Although the occasional presence of matters of contagion in the atmosphere is not to be disputed, still it is an assumption without evidence that these substances are volatile or truly vaporous. Other matters of infection, with which we can compare them, such as the matter of cow-pox, may be dried in the air, and are not in the least degree volatile. Indeed, volatility of a body implies a certain simplicity of constitution and limit to the number of atoms in its integrant particle, which true organic bodies appear not to possess. It is more probable that matters of contagion are highly-organized particles of fixed matter, which may find its way into the atmosphere, notwithstanding, like the pollen of flowers, and remain for a time suspended in it; a condition which is consistent with the admitted difficulty of reaching and destroying those bodies by gaseous chlorine, and with the washing of walls and floors as an ordinary disinfecting practice.'

"It is quite certain that animal matter is exhaled from the pulmonary and cutaneous surface. The particles are small and rare; but, according to Graham, they are inelastic; they are without that diffusive force inherent in gases and vapours, and will therefore only spread through the air like vesicular water, or fine dust over smooth water. When the breath is expired in winter, it passes from the lung with a certain force; but it instantly separates into two portions; 1st, the carbonic acid, which would fall to the ground if it were not dispersed in all directions by the diffusive force; and 2dly, the aqueous vapour which ascends with the heated air and particles of animal matter; the air to mix in air, the water to be condensed, fall, or be dissolved, and the animal matter to fall or be decomposed in the air. In a crowded room, theatre, or church, the carbonic acid is dispersed through every aperture at a retarding velocity. The gas exhaled from the body does not ascend to the roof, as is sometimes supposed, when the temperature of the room is low, for the specific gravity of carbonic acid is 1·524; and, as the density is inversely as the volume, and gases expand 1-493d part (Rudberg) for every degree of Fahrenheit, it only becomes lighter than air when 258 degrees hotter. The carbonic acid emitted from the lungs at a temperature of 100° is more than a third heavier than air at 40°: its density is 1·359, air being 1·000. The carbonic acid emitted by the candles or gas of a room is more than as light again as air; but it soon cools and grows heavier, and, if it were not for the diffusive force, would fall to the ground. Gases cannot remain permanently at the upper or lower parts of any apartment or edifice in other proportions than they exist in the atmosphere; it would be easier for a torrent to stand still on a mountain declivity. They disperse, and can only accumulate around their source when generated rapidly. But particles in suspension—inelastic, smaller, lighter than motes in the sunbeam—stagnate in air, and can only fall to the ground, or be carried away with the fluid in which they float. Smoke and organic matters are removed from a room in the same way—by replacing all its gaseous contents; and particles of both are left adherent to the exposed surfaces, but in quantities smaller in proportion to the velocity of displacement.

"Every population throws off insensibly an atmosphere of organic matter, excessively rare in country and town, but less rare in dense than in open districts; and this atmosphere hangs over cities like a light cloud, slowly spreading—driven about—falling—dispersed by the winds—washed down by showers. It is not *vitalis halitus*, except by origin, but matter which *has lived*, is dead, has left the body, and is undergoing by oxidation decomposition into simpler than organic elements. The exhalations from sewers, churchyards, vaults, slaughter-houses, cesspools, commingle in this atmosphere, as polluted waters enter the Thames; and notwithstanding the wonderful provisions of nature for the speedy oxidation of organic matter in water and air, accumulate, and the density of the poison (for in the transition of decay it is a poison) is sufficient to impress its destructive action on the living—to receive and impart the processes of zymotic principles—to connect by a subtle, sickly, deadly medium, the people agglomerated in narrow streets and courts, down which the wind does not blow, and upon which the sun seldom shines.

"A small quantity of organic matter can only escape with the carbon and aqueous vapour, (37½ ounces daily, according to Dalton,) from the skin and lungs. The presence of a putrid atmosphere is too evident in parts of all towns; and Liebig, by operating on large masses of the atmosphere, has obtained ammonia, which is a product of the putrefaction of animal matter. The existence in the atmosphere of organic matter is, therefore, incontestable; and as it must be most dense in the densest districts, where it is produced in greatest quantities, and the facilities for decomposing it in the sunshine and sweeping it away by currents of wind are the least, its effects—disease and death—will be most evident in towns, and in the most crowded districts of towns.

"It is to this cause, it appears to me, that the mortality of towns is to be ascribed; the people live in an atmosphere charged with decomposing matter, of vegetable and animal origin; in the open country it is diluted, scattered by the winds, oxidized in the sun; the vegetable world—the great organizer—incorporates its elements, so that, though it were formed, proportionally to the population, in greater quantities than in towns, it would have less effect comparatively. The means of removing impurities in towns exist partially, and have produced admirable effects; but the most casual observation must convince any one that our streets were built by persons entirely ignorant of the nature of the atmosphere, and of the mortality which has been proved to exist, and is referable to causes which, though invisible, are sufficiently evident. Every one feels the difference of the polluted and the pure atmospheres described by Milton:—

> "As one who long in populous city pent,
> *Where houses thick and sewers annoy the air,*
> Forth issuing on a summer's morn, to breathe
> Among the pleasant villages and farms
> Adjoin'd, from each thing met conceives delight."

"I shall proceed to show, not only that the mortality is greater in the town than in country districts, but that the mortality of town districts has a certain relation to their density. The relation exists strictly between the density of the organic particles suspended in the atmosphere and the mortality; but the density of the matter in the air cannot be determined directly, for obvious reasons; and with the same number of persons on a square mile, the number of particles in the atmosphere will vary in different districts, according as the means of removing the refuse matter, by sewerage and other means, are more or less efficient. Still by taking districts, which, if the circumstances are not quite the same, and the populations are not entirely homogeneous, will yet have atmospheres which bear a certain specific relation to the numbers living on the same area, it will not be difficult to obtain interesting results.

"It is proved beyond doubt that, if the population be the same in other respects, an increase of density implies an increase of mortality; and that the ratio of increase in the mortality is as certain roots of the density. If a further and more extended inquiry, into which I have not time now to enter, should confirm the principle that the ratio of mortality in towns is as the 6th roots of the density of the population, it will be time enough to ask why this should be the particular ratio. But the chemists must first discover means of determining the density of the atmosphere of organic matter, which may be called the *zymotic atmosphere*, in different districts. The density of population is no strict measure of the density of the zymotic atmosphere; nor, admitting that the matter is a poison, does the relative density of the population express the relative doses inhaled in a given time; if it did, it is improbable, and contrary to all analogy, that the mortality should increase in the simple ratio of the dose. The exact effect of increasing doses of poison has not been accurately determined; but it is well known that small doses of all poison are taken with impunity, and that the dose of arsenic opium, or prussic acid, may be increased up to a given point, at which the disease produced is severe or fatal. Four drops of prussic acid, diluted, may be taken with safety, when four drops more would be fatal to a certain number of persons. How large, or, rather, how small, the dose of matter may be which will produce a zymotic disease it is impossible to say; but if a minute diluted charge of *vaccinine* (vaccine lymph) produce cow-pox, say one time in 1000, it would be an interesting problem to determine, by doubling the quantity, in what ratio the proportions infected increased."

It is interesting to find—as we do by the following quotations—that the labours of those who have recently devoted so much attention to vital statistics and the laws of hygiene, have been put to profit and already furnished important results. "We hope," says Mr. Farr, "to be able to determine more exactly, at some future time, the effects of the different external agents on health and the duration of life; in the meantime the results already obtained suggest two or three practical inferences, which I respectfully submit to those authorities who have the means of carrying sanatary measures into effect, not as new, but as resting on a more extended series of observations and calculations than have before been at our disposal.

"The Appendix to the First Report of the Registrar-General had the following statement, which is borne out by the experience of the four subsequent years:—

"'The mortality of cities in England and Wales is high, but it may be immeasurably reduced. A good, general system of sewers, the intersection of the dense, crowded districts of the metropolis by a few spacious streets, and a park in the east end of London, would probably diminish the annual deaths by several thousands, prevent many years of sickness, and add several years to the lives of the entire population.'

"This passage, with others in the interesting sanatary reports of Drs. Arnott, Kay, and Southwood Smith, with the facts disclosed by registration, were brought by the inhabitants of the Tower Hamlets under the notice of her majesty's government, who, in a very liberal and kindly spirit, introduced a bill into Parliament, and carried it, for founding the Victoria Park, 'in the east end of the metropolis.' Wider streets have already been carried through the densest districts, and others are projected. The results which have been arrived at in this paper justify and confirm in the fullest manner the utility of these measures, and will, I hope, lead to their extension, not only in the metropolis, but in the other cities of the kingdom.

"All 'improvements' disturb property, and injure individual interests; they are, therefore, not only attended by expense, but open to positive objections, over which it can only be shown that the advantages preponderate. The 'improvements' which followed the fire of London were obtained at the expense not only of much loss of property and inconvenience, but of suffering and death; still if the result was the annihilation of plague, which destroyed not the houses but the lives of the great mass of the population every 10 or 20 years, drove the court and parliament from London, spread through the kingdom, paralyzed trade, and was attended by a host of less dreaded maladies, which cut short and embittered life, the improvements were cheaply purchased. It has been stated that the narrow streets and overhanging houses, which are so common on the continent, and of which too many traces remain in England, were erected in close contiguity, among other reasons, for the sake of the shade which they afforded in summer and the shelter in winter; it is now known that this form of building, by obstructing the sunshine and atmospheric currents, is the cause of innumerable diseases; and notwithstanding the cost of any extensive alterations, there can be no doubt that it would be repaid by the amelioration of the health of present and future generations. To take down and rebuild whole districts at once is however impracticable; the best that can be done in the circumstances is to cut open spacious streets, which will carry and produce streams of air through the densest parts, drawing lateral currents from the adjacent narrow streets. Upon visiting some of the unhealthiest districts of the metropolis, I was greatly struck with the number of courts, or streets shut up at the end, particularly in the city of London without the walls; as the wind cannot pass through them, it is evident that the inelastic matter so abundantly generated must be slowly replaced: why should not all these courts be opened at once? Compared with other 'improvements,' the expense would be inconsiderable.

"The inhabitants of the 'rookeries,' which have been recently taken down, are dispersed. It would be interesting to know in what places they are now located. The objection to these measures is that 'you take down the dwellings of the poor, build houses in their places for which the middle classes only can pay, and thus by diminishing the amount of cheap house accommodation increase the rents, and aggravate the evil which you attempt to cure.' It is undoubtedly much easier to displace than to regenerate such a population—the sediment of vast cities which sinks into these obscure receptacles. If the displacement be gradual, however, the inconveniences of removal are diminished: and on a small scale it can have no influence on rents; the people dispersed, if they obtain money obtain houses; or they return, like the Irish, home. The working classes, also, in cities, get lodged in the larger houses of the tradespeople and merchants, who from the facilities afforded by omnibuses and railways, live every year in greater numbers out of town."

As a branch of this important subject, Mr. Farr has thrown out many useful suggestions relative to the means to be employed for the diminution of the quantity of animal and vegetable matter introduced into the atmosphere of towns. These suggestions result from most extensive observation, and are contained in a volume which does not admit of republication in this country. Hence the importance of condensing as much of the most valuable matter as possible, in the pages of this Journal, where it will be read with interest and remain for future reference.

The chief city impurities are the halitus, from the breath and perspiration of living animals, the gases from privies, burial-grounds, slaughter-houses, streets and sewers. As the halitus cannot be diminished in quantity, the only thing that remains to be done is to prevent its undue accumulation in particular places. "While," he observes, "the collection of persons in Robert Owen's parallelograms, and in public institutions, barracks, large schools, prisons, workhouses, must necessarily lead to the concentration of the respiratory excretion, particularly when, as is too frequently the case, the sleeping apartments are crowded, and no mechanical means are employed to facilitate ventilation. A public institution in the periodical epidemics, is like a town without party walls in a fire; nothing but a natural immunity can prevent the propagation of the zymotic action through the imprisoned atmosphere from person to person. According to the common estimate 4 in 100 persons are sick, and as in the metropolis there are 75 persons in 10 houses, one person in every fourth house must be ill, while one in every eighth house will be afflicted with a disease of considerable severity. When the house is small and perhaps dirty, it appears a great act of charity, to remove a poor man suffering from fever for instance to a hospital, where he is provided not only with skillful medical attendance and with physic, but with the proper diet, warmth, and nursing. But have the benevolent founders of hospitals, and the medical officers who generally give their services gratuitously, sufficiently reflected on the probable consequences of bringing 50, 100, 300, or 400 sick bodies under the same roof, and into a few wards, which the sickly breath saturates? Have they ever compared the results of cases treated in hospitals, and in the poorest homes? When hospitals are crowded the increase of mortality soon becomes striking. In the Hôtel Dieu at one time 1 in every 4 persons who entered the pestilential walls died.* The mortality in the large metropolitan hospitals is twice as great as in the smaller country hospitals. This cannot be ascribed to defect of medical skill in the metropolis. Erysipelas and gangrene are still not infrequent in hospitals. The patient is fortunate who escapes phlebitis, or purulent deposits, after any serious operation in a hospital. It is the adventitious disease, and not the knife of the surgeon that is fatal. Are not the effects of general hospitals of the same nature as those that have more than once led to the evacuation of lying-in hospitals? I have rarely seen any statement of the mortality of cases of fever, small-pox, or any other disease, in which it did not appear that a person was twice as likely to die in a hospital as a person suffering from the same disease out of doors. It is generally said, 'Yes, we admit that our mortality is high, but the worst cases are sent in the last stage of disease to the hospital.' Is this certain? Will it account for all the difference? I doubt it very much. And I express the doubt in the hope that the question may be strictly, honestly, and conscientiously investigated by some qualified person who has time to devote to the subject. Until this be done no attempt should be made to extend the system of assembling the sick in the same buildings.

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* Il périssait (18th century) le quart de ce qui y entrait et la moitié du reste n'en sortait qu'après avoir echangé une maladie en elle-même de peu de durée contre une langueur sans remède.—*Eloges Historiques par Cuvier—Tenon.*

"The expense of a patient in a hospital is from 7*s*. to 14*s*. a-week. What would be the effect of allowing a married man in a fever the same nutriment at home, supplying him with an occasional nurse, and seeing that his house was well cleaned and kept comfortable? He would be surrounded by those who from natural affection loved him, instead of the dying and dead in the wards of a hospital. Would not this be an excellent season, too, for religion, charity, and science, to instil just principles and habits into the families of the poor—to ameliorate their homes—so that the sick man may not, as when he returns from a hospital alive and convalescent, be exposed to the same agencies as produced the previous attack?

"The space allotted to the sleeping-rooms of many public institutions in towns is too small. It should in no case be less than 8 feet cube (=512 cubic feet) to each person, with proper apertures for the removal of the breath. If the air were removed twice as fast, a room of 500 cubic feet would be equal to a room of 1000 cubic feet; but it is a difficult matter to remove air from a room with a double velocity—more difficult and expensive than to make the rooms, at least on land, of sufficient extent in the first instance. The influence of a too limited space, if carefully investigated, would no doubt show a certain inverse relation between the mortality and the space, a death marking every degree of concentration of the expired atmosphere. The families of many artizans who get good wages lodge in a single small room, the rent of which is equal to that of a cottage in the country. This is a miscalculation on their part; on coming from the country they get in town higher wages, and could afford to pay for more expensive lodgings, but finding they *can* live in one room, do so, expending the surplus wages on dress, beer, and better food. To forego these would be to curb a natural appetite; they are only reminded of the want of room and pure air by a slight present uneasiness, and discomfort. As they do not trace to their causes the deaths of their children, and disabling, dangerous attacks of sickness, they are led to look upon these events as inevitable. With the limited income at his command, a working man in a town is compelled to practice self-denial; now calculation shows that clean spacious lodging is one of the most necessary things to the maintenance of health, and that it is safer to refrain from other things, such as beer, which, though nutritious, is not indispensable, while spirits are more frequently injurious than beneficial.

"Cuvier's definition of life, or of a living thing, in its utmost generality, is so strictly applicable to a city, that 'London' may be substituted for '*la vie*' in the following sentence:—

"'La vie est donc un tourbillon plus ou moins rapide, plus ou moins compliqué, dont la direction est constante, et qui entraîne toujours des molécules de mêmes sortes, mais où les molécules individuelles entrent et d'où elles sortent continuellement, de manière que la forme du corps vivant lui est plus essentielle que sa matière.'*

"It would be easy to draw the parallel. But I wish merely to remark, that if it is of vital importance to procure the flow of a constant stream of sustenance into a city, it is equally important that the used matter, animal or vegetable, when it has entered and passed through the 'tourbillon,' should be restored back to its source, or be at least removed. In effecting this, art and labour are required, as well to return as to bring in the organized matter, yet it could not be expected while people remained ignorant of the fact that the accumulation of effete matter is as fatal to a population as famine, that they should be ready to incur any great expense for its removal.

"The present investigation fortifies the frequent recommendations which have been made in these reports, and in all works on public health, with regard to sewerage. I shall not refer to the subject further at the present time, as it has occupied the special attention of the 'Health of Towns Commission,' comprising among its members distinguished persons largely interested in property, as well as gentlemen of great sagacity and scientific knowledge, from whom may be expected such practical suggestions on the subject as shall serve for the basis of an act of Parliament, regulating, by some simple provisions, the entire architectural structure of towns.

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* *Règne Animale.*

"I have stated, in previous papers, that we should not rest satisfied with throwing the refuse of towns into the rivers, as this refuse matter, which in certain circumstances is a poison to man, is the nutriment of vegetation, and constitutes, with water, the difference between the barren desert and populous kingdoms. The more organic matter there is, the more subsistence—the cheaper food will be. If Mr. Martin's grand and magnificent conceptions cannot be carried out, the ingenious suggestion of Dr. Arnott deserves to be seriously considered. 'Engineers who pump from the Thames many miles above London, to supply pure water to the inhabitants, could as easily, by pumping away to any desired distance the fluid from the drains, supply the most valuable manure yet known—fluid town manure—to the horticulture and agriculture of the district; and the purity and beauty of the Thames, where it passes through London, would be preserved. Fluid manure, by sinking at once into the earth, is much less offensive to the neighbourhood, and affects less the purity of the atmosphere, than an equal quantity of solid manure, spread, as it usually is, on the surface of the earth.'*

"Whether the remark in the last sentence is correct, we are perhaps not quite prepared to say; but no matter of the kind appears to be sensibly injurious to animals when it is in contact with vigorous vegetation, and is not present in excess. If the irrigation, in an instance referred to by Dr. Alison, convert the meadows around Edinburgh into 'putrid marshes,' it would be in the teeth of all analogy to infer that the practice is innoxious; but if it render the soil more fertile, and is not in excess as manure, it must be inoffensive to the health of Edinburgh Upon the same principle drainage, and all the improvements of agriculture, which tend to increase and invigorate vegetation, to the same extent absorb, impress vitality on decaying matter, and promote the health of the population.

"Much of the putrefying atmosphere of English towns would be got rid of, by removing the cattle markets, slaughter-houses, and manufactories of the anima remains to convenient, distant localities. At present the greatest amount of putri matter is accumulated in districts like Whitechapel, and the city of London without the walls, where the population is most dense, or the sewerage is most imperfect."

One of the most effective means of introducing sanatary measures calculate to lessen the evils existing in crowded communities, Dr. Farr thinks would be the diffusion of such knowledge as would satisfy the public of the intimate connection between the causes of insalubrity and the excessive number of deaths i towns. "The middle classes," he says, "are now very easily put in possessio of the facts relating to health by the popular literature of the day, and will probably be, ere long, *sufficiently convinced* to induce them to incur the expense necessary for the improvement of the districts in which they live. That conviction has no yet reached this point in many towns is to be greatly regretted. After all the publi measures have been introduced, to which the poor have no means of contributing much will remain for them to achieve by their own exertions. It is important therefore, that they should be made aware of the few simple facts and principle which demonstrate the effects on their families of cleanliness, ventilation, and th observation of the rules of health. Their minds would thus be carried alon with the improvements, and would second instead of thwarting them. Few me like to be compelled to do what they are told—but have not the means of knowing—is for their own interest; and this feeling is quite as strong in the worst a in the best parts of London. Much will be effected by example. The highe classes in this country were, not many years ago, intemperate; they becam aware that it was injurious to health; and, from this and other motives, are no as temperate, on the whole, as can for the 'health's sake' be desired. The poo in the worst districts, will no doubt ultimately follow the example, and expen the money on lodging and food which they now waste on spirits. I have before adverted to the influence of medical advice on the habits of the poor; information may also reach them through newspapers which circulate in their districts. Tracts on health may perhaps be distributed with advantage, or persons may be employed to lecture to and converse with them on the subject. In the worst districts the poor reason; for I cannot agree with an eloquent passage in Dr. Southwood Smith's valuable evidence, to the effect that, in towns, 'physical wretchedness annihilates the mental faculties;' although it is admitted that it dwarfs and obscures many of 'the faculties distinctive of the human being.'*

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* Dr. Arnott's Sanatary Reports; *Local Sanatary Reports*, Scotland, p. 12.

"Until latterly," he continues, "the government of this country has done little directly to promote the public health; for one obvious reason, that the causes of insalubrity were not well known, and it was not clear that anything useful could be done; such distinguished writers as Dr. Price, who were well aware of the excessive mortality of towns, ascribing it, among other causes, to 'luxury.' Now that the legislature and the government, having become acquainted with the evil, have evinced the best disposition to investigate its nature and to introduce measures for its removal, care must be taken to discriminate between what can be done by legislation for the people, and what can only be accomplished by themselves individually, and swayed by the slow progress of opinion. Over the supply of water—the sewerage—the burial places—the width of streets—the removal of public nuisances—the poor can have no command; it is only by choosing and paying better rents for well-constructed houses that they can exercise any influence on the landlords; and it is precisely upon those points that the government can interfere with most advantage. The legislature would enact the removal of known sources of disease, and, if necessary, trench upon the liberty of the subject and the privileges of property, upon the same principle that it arrests and removes murderers, who, if left unmolested, would probably only destroy lives by hundreds, while the physical causes, which have been adverted to in this paper, destroy thousands—hundreds of thousands of lives. The movement for the sanatary improvements of towns must originate, it is true, and be carried out in a great measure by the educated and more intelligent classes,—by the statesman,—because the causes in question are not palpable, cannot be seen, and are only discovered by extended observation, calculation, and abstract reasoning. Upon such subjects there can be no excitement. Still much may be done with the people, as well as for them. Health is as dear to the poor as to the rich. The most abject part of the population—creatures who belong to no class, but are the reprobates, unfortunate, and fallen of all classes—can understand its value; and, as we know, are capable of making sacrifices for the good of others; what may not then be expected from the great mass of the labouring population, from the intelligent artisans of towns, who are so apt in acquiring their difficult arts, and are certainly not surpassed by other classes in the facility with which they grasp and carry out a scientific principle clearly announced. To leave many things to the people themselves will be to proceed slowly, because knowledge and new principles on such subjects can only be communicated slowly, but it will be to proceed surely—and the improvement will not die away or be superficial, for it will be the act of the mind, penetrate the inmost recesses of home, and be imparted to future generations."

G. E.

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* Dr. Smith quotes a remark by the medical officer of the West Derby Union:—"Amidst the greatest destitution and want of domestic comfort, I have never heard, during the course of 12 years practice, a complaint of inconvenient accommodation." Upon which Dr. Smith makes this eloquent comment:—"Now this want of complaint, under such circumstances, appears to me to constitute a very melancholy part of this condition; it shows that physical wretchedness has done its worst on the human sufferer, for it has destroyed his mind. The wretchedness being greater than humanity can bear, annihilates the mental faculties,—the faculties distinctive of the human being. There is a kind of satisfaction in the thought, for it sets a limit to the capacity of suffering, which would otherwise be without bound."

Art. XX.—*Experimental Researches on the Post-mortem Contractility of the Muscles, with observations on the Reflex Theory.* By Bennet Dowler, M. D. (*Reprinted from the New York Journal of Medicine*, for May.) 8vo. pp. 39. New York, 1846.

This essay, or monograph, as the author is pleased to term it, though written in not very good taste, nor with much attention to accuracy of arrangement, is, nevertheless, the production evidently of a mind deeply imbued with the spirit of inquiry, but one better adapted to observe and record facts than to weave the conclusions to which these facts lead into a consistent theory.

The essay is replete with matter of very deep interest, and which, by directing anew the attention of the physiologists to the once popular, and perhaps correct, doctrine of a *vis insita* inherent in the muscular fibre, and constituting its *vita propria*, may be the means of introducing more correct views of the functions of the nervous system, and a modification of at least some of the pathological theories of the day.

The main object of the publication before us, is to prove the continuance of muscular contractility for many hours after death, and that it may be then called into action by a blow inflicted upon the muscle. The author adduces in proof of this fact, the summary of forty-three cases, in which the muscles, when struck with a shingle, cane, the flat side of a hatchet, or the operator's hand, contracted forcibly, fifteen to thirty minutes, and even one, two, three, five, ten or more hours after death, and the limbs were, in consequence, caused to perform slow and regular contractions, relaxations, pronations and supinations, which similated the living voluntary movements. The contractions were, in many cases, so forcible as to cause a heavy weight to be lifted by the limb in which they occurred. For the production of these post-mortem contractions, the integrity of the corpse is not at all necessary; they were excited by Dr. Dowler, hours after the dissection of the body, and after the limbs were severed from the trunk.

The bodies operated upon were of individuals of both sexes, and of different ages, varying from 20 to 58 years. The majority of the subjects, however, were young; thus of 39 cases in which the age at which the subject died is given, 31 were below 33 years, and 18 below 26.

The author, without attempting to give all the details in relation to post-mortem contractility, presents thus a few of its leading features.

"Béclard asserts that the most remarkable and best established fact in the muscular action is, the shortening of the muscle during contraction; that its swelling is caused by its shortening, each compensating the other mutually.—*Gen. Anat.*

"It is natural to every muscle, says Haller, to shorten itself by retracting its extremities towards its belly or middle; when in action, becoming shorte and thicker. Whether this doctrine be true of galvanic muscular contraction, I do not know, but I am certain that it does not apply to post-mortem contraction, because it often happens that both the forearm and elbow joint are stiff and immovable, while the biceps may be powerfully contractile, its belly swelling up into a hard lump, relaxing and contracting repeatedly, and unavailingly, owing to the rigidity at and below its insertion in the arm. Here it is evident that the indurated swelling is not owing to the approximation of the two extremities of the muscle, for they are fixed. The increase of volume seems to be owing to an expansion, with rigidity, among its elementary fibres; a zigzag oscillatory motion upon the summits of the contracting masses, is visible to the naked eye."

The author adduces three cases of post-mortem muscular contraction, withou shortening, in yellow fever subjects.

Six cases (five of them yellow fever subjects), are given to illustrate the increase, declination, and subsequent resuscitation of post-mortem contractility. In one, "from four to five hours after death, and two hours after dissection and th removal of the entire viscera, the *cadaver* being warm and rigid, great force wa found necessary to extend the arm to a right angle with the body; extensions flexions, and frictions were used, after which, a blow caused the forearm to ris until the hand pointed to the zenith—the motion was slow and equable; a second blow caused a slight motion without elevating the arm."

In another case, in a few minutes after death but feeble contractions were presented, which ceased, for a time, in half an hour.

"But soon after, the contractile function returned to the same arm with much force. but after repeated blows it was exhausted a second time. Again, after a similar interval, it returned with a like force, a third time. In three hours the rigidity, beginning in the neck, extended itself to most parts of the *cadaver*. The blows were found to have caused well-marked contusions, cellular ecchymoses, &c."

In a third case, observed from five minutes to an hour after death—

"The contractility was found to be active, but after appending a weight of two to three lbs. to the hand, the arm was unable to raise the weight more than twice; a third blow caused the biceps to be convulsed; it gathered up in a knotty heap, which, by forcible extensions and frictions, was, at length, removed temporarily, but in half an hour it returned, and was unchanged as long as observed, being to the touch like a bony tumor."

In a fourth case, observed from fifteen minutes to two hours after death:

"The contractility, though strong, was extinguished, in the right arm, by five or six blows. The left arm, about two hours after, was somewhat rigid, but frictions and extensions caused the contractile function to revive again."

In a fifth body, dead two and a half hours—

"A single blow with the flat side of a hatchet produced flexion, but exhausted the contractile force for half an hour, when it slightly returned. The supinators and pronators acted for an hour longer than the flexors of the arm; the experiments ending five hours after death."

According to Dr. Dowler, the destruction of the contractile function in one arm does not affect the other.

"If several blows," he remarks, "on the same spot, follow each other rapidly, there is but one contraction, but they exhaust the contractile function more than a single blow. If the force be greatly augmented, the contractility may be killed, almost immediately, in the muscle struck, without impairing the action of any other part.

"This force has no resemblance to that purely physical property of bodies called elasticity. A man may stand on the hand of the *cadaver* while the blow is being made on the biceps; let him then step off the hand, and the contraction will follow as usual. If the power be feeble, the relaxation will be quick in most cases; the arm will fall back upon the plane from all points short of the perpendicular, each elevation being less than the preceding one, until the force is expended. Should the hand pass its meridian, gravitation will, of course, aid the contraction in bringing it to the trunk.

"The blood has no appreciable influence upon post-mortem contractility, because when the limb is severed from the trunk and drained of its blood, its action is not thereby diminished."

"The continuance of, or rather the degree in which post-mortem heat is evolved bears no proportion to the intensity of post-mortem contraction." "I find, however," remarks Dr. D., "on examination of the original papers, not yet published in detail, that for the most part, when the heat had declined, the contractility was exhausted, but that the presence of great heat, ranging as high as 113°, did not by any means imply the presence of contractility, nor the absence of rigidity."

"Post-mortem contractility, in the human *cadaver*, Dr. D. found to have no connection with, or dependence upon, the spinal marrow. This may be received," he remarks, "as an axiom, though directly opposed to the reflex theory, and is easily proved by amputating the shoulder in a proper manner. In performing this operation, it is best to leave a few portions of the skin undivided, so as to tie the arm down to the trunk, that the former during action may not turn quite over."

"Post-mortem contractility, when excited by percussion, is, according to our author, the best fundamental type of the periodicity of the contractile function, better, certainly, than that originating in galvanic electricity; voluntary action may be much more perfect, electrical action necessarily more rapid. The contraction operates for several seconds or minutes. Relaxation, by which the muscle is made to assume its normal figure, presents another distinct interval. The counter motion, though less prolonged, is equally distinct. Then comes the perio of repose (analogous to that following the fatigue, in living muscles) the forerunne of renewed efforts; efforts, however, which must speedily exhaust the quantu of contractile force forever. The period of exhaustion may be hastened or deferred, in many cases, according to the manner of procedure. The contractilit may be *killed* by a severe blow, especially if at the same time a weight be fastene in the palm. It is worthy of remark, that by a proper application of blows all th elemental motions of the arm may be produced more or less perfectly."

Dr. D. has attempted to show that muscular contraction occurs spontaneousl after death. We have ourselves seen it repeatedly after death from cholera, an the author thinks or rather hints that the changes in the position of the limbs sai to be observed after death, and which have given rise to frightful tales of person having been buried alive, are to be explained by the occurrence of spontaneou post-mortem muscular contraction.

The results of Dr. Dowler's experiments are, we confess, as unexpected as the are important. That the muscles were capable of being excited to contract fo some time after death was well known to physiologists, but it was admitted th the period this capacity to contract existed was very short, and that it could b excited into action only by some powerful agent, as electricity or galvanism, b that genuine muscular contractions could be produced for many hours after deat by a simple blow of the hand, was a fact no one suspected until the appearance Dr. D.'s original paper.

Our author believes that post-mortem contractility is altogether independent nervous agency. Now, although it is more than probable that the capacity to co tract does exist in the muscular fibre as an inherent property unconnected wi any special nervous influence, and may be excited into action by stimuli applie directly to the muscle, without the agency of motor nerves, still we cannot adn that the experiments before us prove this conclusively; they certainly, if no err shall hereafter be detected in them, prove that regular muscular contractions m take place independently of the brain and spinal marrow, but still we are to rec lect, that the muscles of the limbs, as of other parts, even after separation of the from the trunk, contain a certain amount, more or less, of nervous matter, impressions made upon which it is possible, though the idea is ridiculed by t author, their contractions may be produced for a limited period. We are still t little acquainted with the true physiology of the nervous matter to assert po tively that a portion of a nerve disconnected with the nervous centers is incapal of calling forth action when stimulated.

The remarks of the author upon the doctrine of the reflex action of the nerv of the spine are destitute of that philosophical spirit which would render it a ve easy or pleasing task to enter upon their examination. His experiments pro what we think was very evident before they were undertaken, that muscular c traction is not necessarily or invariably a reflex action; and in this they are so important, but they do not prove that during life, in the state of health and disea muscular contraction takes place independently of the brain and spinal marr The division of certain of the nerves going to a part suspends, we know, its m cular action under all the ordinary stimuli applied to it, while, on the other ha violent contractions or rapid contractions and relaxations in the muscles are quently excited by irritations seated in the brain or spinal marrow, or in so organ remote from the muscles which are thrown into action. There are, in tr many phenomena connected with the muscular system, which go to show inc testably the dependence of their action upon the nerves distributed to them, many which can with difficulty be explained unless we admit the truth of reflex theory.

We recommend to Dr. Dowler the further prosecution of the inquiry he has successfully begun. We at the same time suggest that the adoption of a m dignified style than that of the essay before us, with more systematic arrangem and less of sarcasm, would have a tendency to recommend the author's view a more favourable notice by the profession, both at home and abroad; ridicul not argument, and, by arousing partizan feelings, often prevents the perception adoption of truth.

D. F. C

Art. XXI.—*Das Blei und seine Wirkungen auf den Thierischen Körper. Ein Beitrag Zu dessen Charakteristik für Aerzte, Chemiker und Techniker.* Von Dr. Ferdinand Rumpelt. 8vo. pp. 268. Dresden und Leipzig: 1845.

On Lead and its Action on the Animal Body; a contribution towards determining this action for the use of Physicians, Chemists, and Artists. By Ferdinand Rumpelt, M. D.

To the physician the most interesting portion of the present treatise is that which refers to the character of the morbid effects produced by the action of lead upon the human body, the parts of the body on which the poison acts either primarily or secondarily, and the manner in which it exerts its deleterious influence. The leading conclusions of the author in relation to the pathological effects resulting from the different preparations of lead, are drawn from cases in which these were administered to cows and other animals—and notwithstanding he has compared, and apparently with much care, the phenomena which resulted from the action of the lead in these experiments, and the morbid phenomena exhibited by the human subject, when accidentally exposed to its influence, we have less confidence in the accuracy of those conclusions than we would have had, were they based throughout upon an extended and cautious series of strictly clinical and pathologico-anatomical observations. The work, nevertheless, presents a number of very interesting and valuable facts.

It is divided into twenty-nine parts. The first comprises a general account of lead as a metal, and in its several chemical combinations. In this the author advances the general proposition, that, in no form, can it be without danger introduced into the animal body, and only under certain conditions externally. In the second part is presented a view of the deleterious influence of lead upon those who are engaged in procuring its ore, as well as upon those artizans who make use of its oxydes and salts—with some remarks upon the means of avoiding its poisonous action.

In the third part, the course of the disease produced by the action of the carbonate of lead is shown by the detail of seven cases, which fell under the care of the author. The general summary of the symptoms is given in a succeeding chapter.

The fourth part treats of the direct, indirect, and remote effects of the lead; compares the phenomena resulting from its action upon beasts and men; investigates the mode in which it gains admittance into the circulating fluids; and notices the primary and secondary diseases produced by it.

From this we translate the following account of the morbid phenomena resulting from the poisoning by lead which occurred in seven workmen in a white lead factory, and which phenomena were designated as those of colica pictonum.

"As in all other diseases, the lead colic is destitute of premonitory symptoms; the very first symptoms which present themselves being the commencement of the pathogenetic reaction. Hence, the first indications of disease are a sense of languor and lassitude with a disinclination to rise from bed. The digestion is disturbed; the taste is diminished; sweetish—astringent—or abnormal and bitter. The taste for food becomes entirely lost, and all food is alike disgusting. There is intense thirst. The patient becomes disgusted with everything; is agitated at intervals; commences to gag, without discharging anything from the stomach. The bowels become costive, and no evacuation occurs for many days, and is only obtained by the use of purgatives, when the fœces are discharged in the form of hard balls. The discharges are, however, sometimes of a pulpy or fluid consistence. As soon as the purgatives are suspended costiveness again recurs. At first the patient passes but little urine, not more than a tablespoonful at a time, which is of a straw colour, and only passed with much straining and pressure upon the bladder—subsequently scarcely any urine is discharged, and finally none. The face is pale, as if dusted over with flour. The countenance becomes, as it were, broken up, distressed, and of a grayish-yellow colour. There is a sense of oppression, heaviness, and numbness of the head, with pain and vertigo. A sense of weight and burning in the stomach or umbilicus; then a painful tension extending from the stomach to the scrotum; and in the rectum, bladder, and back, a dragging pain. The stomach is drawn inwards, and the whole abdomen flattened. The patient is unable to lay still for any time, but throws himself about upon the bed. The distressing sense of uneasiness extending throughout the body renders sitting and lying equally painful. In consequence of the pain he is unable to lie upon the back or either side. The pulse is either weak or somewhat firm, full or small. It is either slow, oppressed, or jerking. It is synchronous with the motions of the heart. The respiration is deep. During the paroxysms of pain it is somewhat increased. The parietes of the chest cease to act. The patient is affected with chilliness, often running into a complete rigor. His eyes have a staring expression. The gums have a morbid dead-like appearance, and their edges are of a livid or whitish-blue colour. The legs and hands tremble, and the knees in walking give way. The chills begin to alternate with increased heat; with this commences the second stadium of the disease.

"As the pain increases or diminishes, and as the organs of the abdomen o
chest become affected, the pulse increases in frequency; in a single day rising
from 65 to 100, from 100 to 120, or even to 126 strokes—it is, at the same time.
either hard—hard and full—or soft and small. The breathing becomes short
quick and superficial—often impeded by pain of the chest, and the patient expe
riences a distressing sense of oppression.

"The patient discharges a portion of mucus without cough. A tetanic contrac
tion of the extremities comes on—a pain extends down the arms to the hand
and causes the limb to be kept extended, unless when the hand is spasmodicall
directed towards the epigastrium, and the fingers bent. Severe pains extend fron
the stomach over the left ribs towards the back, shoulder-blade and breast. At th
same time a burning pain extends from the spine into the rectum, causing frequer
ineffectual efforts at stool, and into the testicles. The severe pains of the extrem
ties cause them to become contracted and distorted. The pains of the thighs ar
often so great as to cause the patient to scream out. The parietes of the abdome
at the hypogastrium lie upon the spine—they are rather contracted and tense tha
drawn inwards. The bowels continue obstinately costive and sometimes f
fourteen days no urine is passed, or only in a very small quantity at a time. Th
pain in the back, rectum and testicles, destroys the patient's strength and rende
him unable to move. There is a rigidity extending from the forearm over th
whole body. The eyes are open and fixed; the pupils do not contract. The pa
extends towards the eyes, the motions of which cause a stinging sensation.

"The third stadium is properly only the remote effects of the poison. Th
pulse is now scarcely to be counted; it is tremulous, irregular and intermittin
The head is oppressed, with a tendency to determination of blood to its vesse
There is pain at the top of the head, and the brain feels as if compressed. Th
pain is sometimes so severe as to cause the patient to scream out. The patie
becomes speechless; by the motions of his head he gives intimation that he hea
and understands the questions put to him, but finally loses the power to do th
There is a distressing sense of restlessness throughout the whole body—so th
the patient can neither sit nor lie, and when he attempts to stand his knees si
under him. He feels a painful sense of oppression behind the sternum and
the left breast.

"If the disease does not terminate in palsy, and the remedies employed duri
the second and third stadii have their desired effects, the bowels become relax
the stools of a more natural appearance; the pain in the abdomen disappears, a
the functions of the digestive organs begin to assume their normal activity. T
skin becomes moist, and the urine is regularly discharged. The sense of oppr
sion at the chest disappears; the pains diminish in intensity, and the breath
becomes free and regular. The oppression of the head and the vertigo cease;
intellect becomes clearer, and the countenance assumes a more sprightly expr
sion. The nights are more quiet, and the patient sleeps more naturally. The dig
tion becomes regular. The feeling of every part of the body becomes improv
and the strength gradually increases. The complexion, however, continues,

some time, pale, and the livid, the deadened gums remain separated for a length of time from the teeth."

This section concludes with some remarks on the different groups of symptoms which result from the poisonous effects of the different preparations of lead according as they are introduced into the lungs, or stomach, or are applied upon the skin. Colic, it is very generally admitted, is one of the most common forms of disease resulting from the lead in whatever manner introduced: and, accordingly as the lead affects the motor nerves, the lungs, or the brain, succeeding or superadded to the enteralgic symptoms, there occur arthralgia, diminished action and rigor of the muscles of the extremities ending in paralysis, diminished action of the heart, encephalopatia and various nervous symptoms, disturbed respiration, oppression of the chest, &c.

In the ensuing chapter the author presents more fully his views of the mode in which the lead, when introduced into the system, produces its deleterious effects. When acetate of lead is introduced in large or in repeated small doses into the alimentary canal, he describes it as at first uniting with and changing the properties of the mucus contained in that cavity, while, at the same time, it excites gradually an irritation of the mucous membrane, indicated by increased thirst and loss of appetite—which becomes more or less intense, according as the acetate of lead is more or less changed by its combination with the mucus. A portion of the lead also enters into the orifices of the veins of the stomach and intestines, and thus mixing with the blood changes the properties of the latter—producing small dark coagula. The irritation produced by the action of the poison upon the stomach being conveyed through the nerves to the spinal cord, is thence reflected upon the other nerves of sensation as well as upon those of motion. The disturbance of the respiratory function, the author believes, to be in part owing also to the direct action upon the pulmonary blood-vessels and their nerves of the lead conveyed to them through the blood. The irritation of the stomach is, in time, extended to the brain, and thence reflected upon the different cerebral nerves; but the brain may also be immediately affected by the lead contained in the blood circulating through its vessels.

It is not necessary to follow the author in his exposition of the views thus briefly announced, and his application of them to explain the nature and succession of the symptoms produced by the action of lead upon the animal body.

To show the action of the lead (white lead) upon the coats of the stomach and bowels, the morbid appearances presented by the different organs in animals destroyed by the acetate of lead, are compared with the pathological condition of the same organs in the human subject after death from the effects of lead, as given by Tanquerel.

RUMPELT.	TANQUEREL.
"1. The upper layer and epithelium of the stomach formed a slimy, 1–2 lines thick, homogeneous mass.	"1. The mucous membrane of the alimentary canal, from one foot below the stomach to the rectum, was covered with a thick, glutinous, yellow mucus, which was with difficulty scraped off with the knife.
"2. A thick, glutinous, ropy, semi-transparent mucus, took the place of the epithelium of the stomach.	"2. A thick, coagulated mucus covered the mucous membrane of the intestines.
"3. The mucous membrane of the stomach was at different parts changed to a whitish appearance, dry and friable.	"3. The small and large intestines were somewhat contracted, and covered with a thick adherent layer of a glutinous matter. They could be readily distended by inflating them with air, but tore upon the slightest handling.
"4. Through these whitened spots, the vessels, distended with blood, of the inner coat of the stomach could be distinctly perceived, as red lines.	"4. Brownish lines indicated the course of the gastric vessels.
"5. The entire length of the small	"5. The stomach and small intestines

intestines were in parts decidedly reddened.	were slightly reddened—and the rest of the canal in parts of a rose red, and, as it were, injected.
"6. There occurred numerous small ecchymoses on the whitened portions of the mucous membrane of the small intestines."	"6. Ecchymoses and blackish stripes appeared upon the mucous membrane of the small intestines."

In the same manner the author exhibits the effects of lead upon the brain.

RUMPELT.	TANQUEREL.
"In a portion of brain of a young man examined after forty-eight hours,	"Tanquerel describes the following as the pathological appearances presented by a number of brains.
"1. The gray and white substances were not to be readily distinguished from each other, both being of a grayish-white appearance.	"1. *a.* The substance of the brain was externally of a dirty yellow, and internally of a grayish colour, and the gray substance of an ash-gray yellow. *b.* The substance of the brain was of a dirty yellow.
"2. By a slight traction some portions were easily separated, which presented an evident fibrous appearance.	"2. Dr. Glück notices a number of canals through many parts of the white substance of the brain in a person destroyed by the effects of lead, as a morbid appearance.
"3. In the brain of an adult forty-eight hours after death, both substances were easily distinguished from each other, notwithstanding the gray had assumed an appearance similar to the white.	"3. *a.* The substance of the brain was of a yellowish colour. *b.* The white substance was of a dirty yellow, ash-gray, and dull, and almost transparent; the gray substance, instead of a rose-red, appeared of a yellowish-green.
"4. The substance of the brain was of a dense consistence and was easily broken.	"4. *a.* The parenchyma of the brain was hard. *b.* It was as readily broken as the substance of the liver. *c.* The convolutions of the brain were flattened so that the depressions between them had disappeared. *d.* The texture of the brain was hardened.
"5. The pia mater was thickened and easily separated from the brain."	"5. *a.* The meninges were dry. *b. ibid* *c.* The meninges in a patient who had died of encephalopathy from the poison of lead were dry. *d.* The meninges with their distended blood-vessels were dry."

"A portion of the *spinal cord* of adults examined twenty-four and forty-eight hours after death presented the following appearances. "The pia mater very much contracted and thicker than in its normal state, so that the cut end of the medulla spinalis projected considerably beyond the divided edge of the former, in the form of a button, in which the fibres of the cord were very readily detected."	Tanquerel notices a softening of the substance of the cord; an injected and yellowish appearance of the cerebellum and medulla oblongata; a softening o the medulla lumbaris; a number of coagula of blood in the dura mater spinalis; from 3–4 ounces of fluid in the spina canal, the veins being at the same tim gorged with blood. The pia mater decidedly reddened by over-distended ram fications of its blood-vessels, and the substance of the medulla spinalis presentin numerous red points. Other accurat observers notice dryness of the membranes of the cord and increased densit of its substance.

A portion of the *ischiatic nerve* three inches long, presented, twenty-four or forty-eight hours after death, the following appearances.

"The sheath of the nerve was thickened and contracted, so that the contained nerves, with their neurilemma, separated from each other, projected beyond the divided end of the sheath in the form of a button, and of a firm consistence, opaque and of a yellowish-white colour. The nervous sheath was at its edges somewhat transparent, and appeared of a dead grayish-white colour. The individual nervous filaments appeared separated, and distinct from each other."

Tanquerel notices the following as the morbid appearances observed by him in the nerves.

"The substance of the nerves in a patient who died amaurotic and comatose, was firm.

"The ganglions in a patient who had suffered from encephalopathy had a grayish-yellow appearance."

In the tenth part the author treats of the entrance of the oxide of lead into the blood. While he admits that the presence of lead in the blood has not been detected by chemical analysis, the fact, he believes, may be established by the change in the physical appearance of the blood, and in its physiological relations.

In the thirteenth part, the author presents the results of experiments made to test the presence of lead in the blood of different portions of a rabbit, destroyed by the administration of acetate of lead.

A portion of the lungs being subjected to the action of a solution of sulphuretted hydrogen, there occurred immediately a black precipitate Sulphuric acid, added to the blood from the lungs, caused, after some time, a slight cloudiness.

A portion of the heart subjected to the action of a solution of sulphuretted hydrogen, became immediately of a brown colour, and after twelve hours a slight dark-coloured precipitate was thrown down. Sulphuric acid, added to the blood from the heart, caused an almost imperceptible cloudiness.

Blood from the thoracic aorta and vena cava, subjected to the action of sulphuretted hydrogen, became of a brown colour, and after some time a slight precipitate took place;—subjected to the action of sulphuric acid, after a long time it became slightly cloudy.

The small intestine, from which the yellowish mucous coating was removed, being submitted to the action of sulphuretted hydrogen, there occurred, after twelve hours, a little blackish precipitate, but under the action of sulphuric acid presented no perceptible change.

When the duodenum, after removal of the coating of mucus, was subjected to the action of sulphuretted hydrogen and sulphuric acid, the same results occurred. The kidney gave under the action of sulphuretted hydrogen a black precipitate, and under the action of sulphuric acid, a slight precipitate. Results were obtained, when the brain was submitted to the same reagents, similar to those obtained from the heart. No traces of lead could be detected in the medulla spinalis.

In the remaining portions of the work, the author explains the pathology of the several forms of disease produced by the poisonous effects of lead, by an application of the general proposition which he has attempted to establish, namely, that the lead produces a direct irritation upon the tissues with which it comes first in contact—which irritation is extended through the nerves, the spinal marrow and brain, to neighbouring and remote organs; the lead also causes, by its entrance into the blood and the changes it occasions in it, an irritation in the deep seated organs, to which it is carried in the course of the circulation, so as to come immediately in contact with their tissues. The whole of the morbid phenomena produced by the poison of lead, are referred to a sub-acute inflammation of the vascular and nervous systems.

Thus, in what the author terms the five forms of the lead disease, we have

1st. Symptoms referable to the abdominal cavity, commencing with colicky pains, (*colica saturnina*,) and terminating with all the symptoms of enteritic inflammation.

2d. Symptoms referable to the thoracic cavity—oppression and tightness with shortness of breathing, and symptoms similar to those of pneumonia and carditis.

3d. Symptoms referable to the cranial cavity—as severe pain and oppression, and other symptoms indicative of an inflammatory disturbance of the brain.

4th. Symptoms of painful irritation or inflammation of the medulla spinalis—giving rise to tonic and clonic spasms of the muscles, terminating in anæsthesia or paralysis.

5th. In the subcutaneous cellular membrane, and in the synovial membranes, more particularly of the lower extremities—violent arthralgia, with swelling of the joints, and other symptoms of inflammation.

The treatise of Dr. Rumpelt is, upon the whole, calculated to improve our knowledge of the pathology of the diseased condition produced by the action of lead upon the animal body. Some of the positions assumed by the author appear to us to want a more extended series of observations to support them—while his pathological reasoning does not strike us as being always very accurate. Many of the data from which the author's conclusions are drawn are derived from the effects, direct and remote, which resulted when large or repeated doses of one or other of the salts of lead were given to animals—now, whether the pathological effects of these salts, when thus administered, are identical with those caused by the lead introduced gradually into the system—as in the case of the various workmen who are brought daily in contact with one or other of its preparations—is a question which may admit of some doubt. It is true, that the author has endeavoured to remove this doubt by comparing the symptoms during life, and the state of the organs after death as presented in animals poisoned by lead, and in patients labouring under disease produced by exposure to its influence: still there is a very great difficulty in making the comparison so as not to be led into error. D. F. C.

Art. XXII.—*Ueber eine Neue Geburtszange zur Extraction des im Beckeingange Stehenden , Kindskopfes. Mit abildungen.* Von Dr. Th. Hermann, arzt und wundarzt erster classe in Bern. 4to. pp. 50. Bern, 1844.

Description of a new Obstetrical Forceps for abstracting the child's head when engaged in the upper strait of the Pelvis—with Plates. By T. Hermann, M.D. Physician and Surgeon of the first class in Bern.

The author does not confine himself in the present work to a mere description of the new instrument which he has invented, but enters into a very full and interesting examination of the structure and form of the female pelvis, and its different diameters, in reference to the mechanism of labour; of the several means and instruments that have been proposed for facilitating labour; of the form and qualities demanded in a forceps adapted for application upon the head when in the upper strait; and of the mechanism of instrumental labour in general.

There is a difficulty in rendering the views and explanations of the author intelligible without the diagrams by which they are accompanied, or we should have been inclined to have made numerous extracts from the introductory portion of the work; and though we shall give a description of the forceps invented by him, we fear that no very accurate idea will be formed of it without a drawing.

"1. This forceps has, in fact, the principal attributes of all the other obstetrical forceps; it differs from them, however, in the following particulars.

"A. The blades have no greater length than those of the long forceps generally; on the contrary, they appear somewhat shorter, which, however, is a deception resulting from their peculiar curvatures. Their length measures eight inches nine lines (*pied de roi*). Their blades are, in the same manner as Siebold's, fenestered at their greatest breadth they are one inch and a half, and, as well as the whole instrument, are strongly made.

"1. The curvature to receive the head is similar to that of Siebold's, but less decided; the greatest distance between the blades measuring barely two inches four lines; the distance between the points four lines.

"2. They differ in their lateral (pelvic) curvature from the common forceps, in this being made very nearly to correspond with the median line of the pelvis. The curvature is the most decided near the middle of the blades; towards the points their direction approaches more to that of a straight line, without being so entirely; towards the handles the curvature is the same as towards the points, until it passes over into the perineal curvature.

"3. The bold perineal curvature (which is in the opposite direction to the first) belongs only in part to the blades—the lock being placed within it, upon that part which lies without the vulva near the centre of the curve. This curvature marks the prolongation of the pelvic curvature, and forms almost a semicircle, the cord of which is from fifteen to eighteen lines. The curvature rises boldly over the perineum, reaches the lock, and then descends and passes onwards to the straight portion of the handles.

"4. Nearly in the centre of their length, namely, four inches three lines above the lock, and in the middle of their breadth, which here is about one inch four lines, each blade is pierced with a round hole two and a half to three lines in diameter.

"B. The handle of each blade of the forceps passes from the lock downwards in a bold curve which completes the second portion of the pelvic curvature; on arriving at the horizontal plane, it makes a short curve in the opposite direction and then continues in a straight line. The handle is precisely similar to that of Siebold's forceps, and is covered with wood on its outer surface, as far up as the commencement of the perineal curvature. To the lock, the handle is seven and a half inches in length.

"C. The lock is a combination of the original one of Dubois or Nägele, and that of Siebold. The button is similar to that of the first, but somewhat higher. It is rounded upon its upper surface, in the centre of which there is a funnel-shaped depression four lines deep and not quite two and a half lines in diameter. Its edges are milled, and on opposite sides there arise two small projections, which enable it to be more readily turned. The mode in which the blades are secured by the lock is the same as in Siebold's.

"To facilitate the attachment and separation of the blades, in the opposite direction of the knobs a groove can be made upon the upper surface of the button about a line in depth, into which a key may be inserted.

"The smaller or supplementary forceps are intended to fulfil a double object, namely: first, to effect a pressure upon the larger forceps from above, in order to facilitate the passage of the fœtal head into the pelvis; and, secondly, to effect a traction upon those forceps downwards, in order to facilitate the passage of the head through the pelvis. This instrument is composed of three parts.

"A. A perfectly smoothly polished and very accurately formed globe of the diameter of five and a quarter lines. It has on its sides, two projections which stand in such a direction with each other, that a line drawn from the basis of each shall cross at a right angle in the centre of the ball. These projections consist of,

"1st. A somewhat conical pin five lines long, which is so formed as to pass readily into the hollow upon the upper surface of the button of the forceps lock. The end of the pin must be so formed as to pass easily in and out of this hollow.

"2d. A forceps apophysis of about the same caliber as the pin. It commences to rise from the surface of the ball of a cylindrical form, which form it preserves one line of its length, when it suddenly assumes a greater diameter, so that a cylindrical ring shall project around it to the extent of one line, being flat on its upper and lower surfaces, and one inch in thickness; after this the apophysis assumes a cubic form, the dimensions of this portion being about two cubic lines. From the upper surface of the cube a cylinder proceeds provided with a screw worm. This cylinder is about two and a half or three lines long and one and a half lines in diameter to the edge of the projecting worm. Upon this cylinder a nut passes, which is made similar to that of Siebold's forceps. It should not be too smoothly polished nor rise too high. When the nut is screwed tight it should stand transversely with the instrument.

"B. A spring bow two inches three lines long, of nearly an oblong horse-shoe shape, and formed out of a strong steel spring. At the center of the bent portion there is a square opening which fits exactly upon the cube of the forceps apophysis, so that by the screwing on of the nut the bow can be firmly attached to the ball. The sides or arms of the bow run parallel with each other, and not so far apart as the blades of the large forceps in the neighbourhood of the round openings, when closed. From each of their free extremities, and projecting inwards, there arises a smooth cylindrical pin, of such a caliber as shall pass readily into the round openings in the blades of the large forceps, and of such a length that they shall not project beyond their inner surface.

"C. The handle of the supplementary forceps is composed of two exactly similar lateral halves. Each half is formed of a strong metal plate covered on its outer surface with wood. The end which attaches to the steel bow by means of the polished ball, is so curved as to form with the opposite half a kind of steel fork, the strong prongs of which have on their inner surfaces a spherical depression, and stand so far from each other as to receive between them the ball of the forceps, a small segment of which passes into the spherical depressions, and when the two parts of the handle are attached, hold it fast so that it can escape on no side while it moves readily in every direction. The prongs of the forked extremity are about eight lines long. The opposite end of the handle is bent latterly so as to form when the two halves are attached, a transverse arm three inches long.

"From the thick forked extremity the metallic part of the handle becomes gradually thinner and broader, and from a short distance below the fork is covered with wood. As near as possible to the forked extremity the two sides of the handle are fastened firmly together by means of three strong screws. Another screw passes through the entire thickness of both parts of the handle near the cross piece at the opposite end. On one end of the cross piece is a screw key for opening and closing the lock of the larger forceps, in the form of a beveled projection four or five lines long, and one line high.

"When the whole instrument is united, it measures seven and a half inches in length. When it is to be used to make a downward pressure upon the forceps, the pin upon the side of the ball is to be placed in the depression upon the upper surface of the lock button, the bowed portion being passed in the direction of the handles of the long forceps. When used as an extractor, the pins which project from the ends of the bows are to be passed into the round openings in the blades of the long forceps."

The peculiar advantages of the forceps invented by Dr. Hermann, and the exact mechanical operation of the supplementary portion, as well as the precise circumstances under which this latter is to be resorted to, cannot certainly be perfectly understood without a reference to the remarks of the author upon the axes and curvatures of the pelvis and the mechanism of labour generally, and these could not be rendered very intelligible without the diagrams by which they are illustrated. Even the description of the instruments which we have given will with difficulty be understood without a drawing. We add, to render, if possible, the description more plain, a tabular view of the dimensions of the forceps as laid down by the author.

Long forceps.

Length sixteen inches three lines *pied de roi.*
" of the handle to the lock, seven inches six lines.
" of the part of the handles covered with wood, five inches six lines.
" of the handles to the commencement of the perineal curve, six inches.
" of the blades, from their points to the lock, eight inches nine lines.
" from the lock to the round openings, four inches three lines.
" from the points to the round openings, four inches six lines.

Greatest breadth of the blades, one inch six lines.

Greatest distance of the closed blades from each other, two inches four lines.

Distance between the points of the closed points, four lines.

Pelvic curvature—height of the points of the blades from the level plain or which the instrument lies, five lines.

Perineal curvature—height of the apex above the horizontal level, one inch fiv lines.

Lock button—breadth, nine lines—thickness, three and a half lines.

Depth of the depression on the upper surface of the button, four lines.

Diameter of the depression, two and a quarter lines.

Supplemental forceps.

Length, eight inches.
" of the handle, five inches seven lines.
" of the wooden layer, four inches three lines.
Distance between the ends of the pins upon the free extremities of the bow, four and a quarter lines.
Length of the transverse arm at the end of the handle, three inches six lines.

D. F. C.

Art. XXIII.—*Theoretisch en Praktisch Handboek der Mechanische oogheelkunde, het zein, het middle waardoor wij zien, den optisch-Physiologischen werkkring der oogen, de eigenschappen en gebreken des hulpglazen en de wijze van derzelver aanwending bij de Mechanische oozientern; door.* J. A. Hess, geoctroijeerd gezigt en oogheel kundige te Middelburg. 8vo. pp. 273. Middelburg, 1842.

Theoretical and Practical Manual of Mechanical Opthalmology, containing an account of the Organs, Physiology, and Mechanism of Vision, and of the proper construction of the glasses adapted to remedy the various forms of defective vision. By J. A. Hess, Optician in Middleburg.

The first part, which constitutes the greater portion of the present volume, is taken up with an inquiry into the optico-physiological functions of the eye; the second chapter, occupying sixty-nine closely printed pages, being composed of extensive quotations from the works of Renatus Descartes on Optics, of G. Adams on Sight, and from that portion of the physiology of Müller which treats of the theory of vision. The succeeding six chapters contain an exposition of the author's own views of the physiology and mechanism of vision. These views are interesting, and may be studied with profit by those who desire to become acquainted with the true character of the various defects of vision, in reference, especially, to the mechanical means best adapted for their relief.

The second part treats of the mechanical and organic defects of vision and the means of remedying them. In the several chapters of this part an account is given of the cause of myopia, presby-myopia, presbyopia, and photophobia, and of the properties of the concave, convex, flat and coloured lenses, and the cases to which they are respectively adapted.

It is certain that the true character of those several defects of vision which are capable of being benefited by appropriate lenses, and the proper form of those demanded in each case, cannot be understood without an intimate acquaintance with the optico-physiological construction of the eye and the theory of vision generally. As an introduction to the leading facts in relation to these subjects, the volume before us is not destitute of considerable merit. The extent of that portion devoted to the subject of vision and the operation of the eye as an optical instrument, is certainly disproportionate to that devoted to the consideration of the defects of vision, their nature and the mechanical means best adapted to remedy them. This latter, short as it is, presents, however, a series of very useful rules and suggestions, all important to direct to a proper selection of glasses for the use of those who have from birth defective vision, or whose vision has become impaired by organic changes, the result of disease or of the spontaneous changes which take place in the progress of life, in one or other portion of the optic globe or its contents.

The author has not entered into a consideration of all the forms of defective vision—but has confined his remarks to those alone in which artificial lenses can be employed with advantage; he has consequently not occupied the whole of the ground properly embraced under the denomination of mechanical ophthalmology.

D. F. C.

Art. XXIV.—*The Writings of Hippocrates and Galen. Epitomized from the original Latin Translations.* By John Redman Coxe, M.D. *Multa renascentur.* 8vo. pp. 681. Philadelphia, 1846. Lindsay & Blakiston.

We return our thanks to Dr. Coxe for having undertaken the somewhat laborious task of preparing the present edition of the writings of Hippocrates and Galen. We are not, it is true, in favour of compendiums and epitomes, generally, but in the present case, are convinced that it is the only means by which a large proportion of the profession in this country can obtain an introduction to the Fathers of medicine, however illy adapted it may be to render them acquainted with all that their writings contain. Dr. Coxe has therefore in our estimation conferred a very important favour upon a numerous body of American physicians who, deprived of the means of consulting in the original, or even in an English translation, the works of "these pioneers of medicine," are shut out from all acquaintance with them, save the fact that their names are in some manner or other connected with the history of the healing art. There are few who could be found willing to undertake the labour of epitomizing the writings of Hippocrates and Galen better qualified for the task than the editor of the volume before us. There are none amongst us who have studied these writings with more care, or who have more fully prepared themselves for forming a correct estimate of their true value. The digest Dr. C. has given to us, though not quite so extended as we could have desired, is nevertheless a highly interesting one, and upon the whole ably executed. It will no doubt be read with avidity by thousands who until now were unaware of what "the old man of Cos," and his industrious commentator and generous defender knew and taught concerning the institutes and practice o medicine.

We are not, certainly, of the opinion that the most profound study of the writings of Hippocrates and Galen would be sufficient to indoctrinate any one int the principles of the healing art, or to fit him for its successful practice, or that good practitioner may not be formed without the slightest acquaintance with thes writings. We still regret that the physicians of this country should know so littl of what they contain. As a mere subject of commendable curiosity we shoul expect the members of "a learned and liberal profession" would be desirous o acquainting themselves with the opinions and practice of the ancient sages of medicine. But the writings of Hippocrates and more especially of Galen, recommen themselves to our notice not merely as a means of gratifying curiosity, but as containing many a precept the result of close and accurate observation, which wil still be found of value,—even if it only serves to confirm the accuracy of moder doctrines. While we shall find in them, likewise, the first sketch, if not th finished model of many of what are esteemed almost contemporaneous discoveries and of medical doctrines, the enunciation of which by living authors, or thei immediate predecessors, as novel views deduced from recent observations, ha been the means of placing their names high upon the roll of fame.

Neglect of the vast body of facts recorded in the writings of those who hav gone before us and the constant desire for novelties in doctrine and in practice which prevails, less, it is true, now than formerly, have been the means of retarding the progress of medicine, and rendering it amenable to the charge of movin in a circle,—teaching, after the lapse of years, for truths in pathology and therapeutics, what had in times gone by been denounced as essentially erroneous, an proving facts by a laborious series of observations, which had been already i former times established by similar evidence, and faithfully recorded by write worthy of all credit.

D. F. C.

Art. XXV.—1. *Sixth Annual Report of the Superintendent of the Insane Hospital, (Augusta, Maine,)* 1845.
2. *The Annual Report of the Eastern Asylum, in the city of Williamsburg, Virginia, for* 1844.
3. *Report of the Committee of Regents, of the Physician, and of the Superintendent of the Lunatic Asylum of South Carolina, for* 1842.
4. *Report of the Committee on the Lunatic Asylum (of South Carolina), including the reports of the Regents, Superintendent and Physician,* 1845.
5. *The Twenty-Second Annual Report of the Officers of the Retreat for the Insane, at Hartford, Connecticut, May* 1846.
6. *Report of the Maryland Hospital (for the Insane,) for the year* 1845.
7. *Report of the Trustees and Superintendent of the New Hampshire Asylum for the Insane, June* 1846.

1. The Report of the Hospital for the Insane at Augusta, for the past year, was prepared by Dr. James Bates, the successor of Dr. Ray, as Medical Superintendent of that Institution. It manifests ability, and an interest in the investigation of Insanity. The Statistics for the year are as follows, viz.

	Males.	Females.	Total.
Patients in Hospital, Nov. 30, 1844	50	26	76
Admitted during the year	50	49	99
Whole number for the year	100	75	175
Discharged (including deaths)	45	45	90
Remaining Nov. 30, 1845	55	30	85
Of those discharged there were cured	21	17	38
" " " died	5	2	7

Causes of Death.—Old age 1, phthisis pulmonalis 2, intestinal hemorrhage 1, suicide 1, suicidal wound inflicted before admission 1, not stated 1.

	Males.	Females.	Total.
Whole number of patients since opening of Hospital Oct. 14, 1840	276	210	486
Discharged (including deaths)	213	162	375
Of whom there were cured			171
" " died	18	8	26
Civil Condition			
Married	122	117	239
Single	137	76	213
Widowed	17	17	34

The average time spent in the Hospital by the 171 patients who were discharged cured, was 140 days. *Fifty-six* cases believed to be curable, were prematurely removed from the institution. "This," says Dr. B., "is one of the evils which it has been thought most prudent not to remedy, by stipulating a period, before which patients should not be removed uncured, until the house should be filled.

"Our present situation will not only justify, but I think imperatively demands the correction of this evil.

"Before closing this branch of the subject, it may be proper to observe, that from no source does a well-regulated asylum for the insane suffer so much in its reputation, as from the false representations of patients prematurely removed.

"It is peculiarly interesting and gratifying to observe the kind feelings and gratitude expressed by those who leave the hospital perfectly cured, towards those who have had the charge of them; whereas those who go away still insane, remember with bitterness every restraint and denial they have experienced.

"All this would be harmless, but for the morbid sympathy which induces some persons to place more reliance on the evil reports of an insane man, than the truth from the best citizen in the community."

"Of 486 admissions, 211 are represented by their friends as having insane ancestry, or blood relatives in that condition.

"When we add to these, foreigners and others concerning whom little information can be obtained, there can be little doubt that more than one-half are hereditarily predisposed to that state of brain of which insanity is a symptom."

Ages at which insanity commenced. Ten to twenty years 85, twenty to thirty 168, thirty to forty 110, forty to fifty 72, fifty to sixty 35, sixty to seventy 11, seventy to eighty 5.

Taking these items, and the data afforded by the last census of the state of Maine as the elements of a calculation, Dr. B. arrives at the conclusion, that the greatest proportion of men attacked with insanity is between the ages of 30 and 40 years, and that of women between 20 and 30. He also infers that "males under 20 furnish a fearful proportion," and that in both early and advanced life men are more subject to the disease than women.

The people of Maine have been slow to take advantage of the means afforded by this hospital for the cure of their insane. From the records of the past year. as imbodied in this report, it is evident that there is an increasing appreciation of the value of the institution, and the time is not far distant when all its apartments will be constantly occupied.

2. During the year 1844, the Eastern Asylum of Virginia was enlarged by the construction of another wing. This addition, while it increases the extent of accommodations, affords very satisfactory facilities for the classification of the patients. The report before us opens with a very pretty coloured lithographic view of the asylum.

	Males.	Females.	Total.
Number of patients Jan. 1, 1844 - -	62	47	109
Admitted during the year - - -	17	24	41
Whole number - - - - -	79	71	150
Discharged during the year - - -	7	5	12
Died - - - - - - - -	3	3	6
Remaining Dec. 31, 1844 - - -	69	63	132

The condition of the patients discharged is not mentioned in the report.

The Eastern Asylum was the first establishment in the country, devoted excl sively to the treatment of the insane. It went into operation prior to the America Revolution. During the whole period of its existence, to the time of the prepar tion of this report, the number of patients admitted was 851, of whom 539 we males, and 312 females. In respect to seasons, the largest number of admissio was in summer, the next in autumn, and the smallest in spring.

The report of Dr. Galt contains a large number of valuable and interesting fac in relation to insanity, exhibiting great industry on the part of its author, and extensive acquaintance with the divers authorities upon the disease.

3. It is but recently that we have been enabled to lay our hand upon any doc ment relating to the asylum in Columbia, South Carolina. The pamphlet no before us includes the several reports of the managers and officers, together wi the laws for the government of the institution.

The report of the managers is a well-written essay upon the condition of asylu in general, the curability of the insane, and the necessities of the particular ins tution under their care. It however contains nothing important in a medical po of view, which has not heretofore been published in this journal. The report the physician, Dr. Frerevant, is chiefly devoted to the difficulties under which t asylum has laboured, and to its wants in order to place it upon an equality w some of the other institutions in the country.

The following remarks are well worthy of notice. "When a lunatic is kept home, and subjected for five or six months to the care of the family physici when everything that his skill (with a perfect knowledge of the constituti habits, &c. of the patient) could direct has been done, then to bring him to asylum, and expect a cure to be immediately effected, is asking more than just or reason can demand. But is it right that the patient should be placed under care of those who are unaccustomed to the attendance on lunatics? How of is the case aggravated, either by the foolish indulgence of friends, the restraint gross ignorance, or the injudicious treatment of the medical adviser! I tru shall not be deemed disrespectful to my brother physicians when I say, that in set of diseases are they more at fault than in those of the mind. It falls to the of but few to be called to attend the insane, and when such a case occurs, their own experience offers no guide, and they must follow the directions of others. How various and conflicting are the directions which they there meet! Talk of madness, and you have the lancet, drastic cathartics, emetics, &c. &c., instantly presented, and lamentable are the effects constantly produced by their injudicious use. There is not a year that I do not see constitutions shattered, and the recuperative energies of the brain entirely destroyed. Case after case of imbecility is the result of injudicious bleeding.

"Lunatics generally do not require and will not bear very active treatment; and he who prescribes merely because he has a lunatic under his care, is more apt to go wrong than right, if his attention has not been fully directed to that particular species of disease."

"When I took charge of this institution," says Dr. T., "there were 53 inmates; in the last seven years we have received 153, making in all 206; of this number, 83 have been cured and removed much improved, and 54 have died. It must be borne in mind that very many of the fatal cases were in a hopeless situation when they entered; four died in 48 hours after they came; several never rose from the beds in which they were placed, and many sunk from chronic disease of the lungs and bowels, engendered by exposure during their wanderings, or the want of attention when confined in the jails and workhouses; 20 were epileptics, 10 eloped, 6 committed suicide."

4. The report for 1844–5 of the asylum at Columbia is very brief. The statistics for the year are as follows:

Number of patients Nov. 5, 1844 - - - -	72
Admitted during the year - - - - - -	23
Whole number during the year - - - - -	95
Discharged, 6 deaths included - - - - -	24
Remaining, Nov. 5, 1845 - - - - - -	71
Of those discharged, there were cured - - -	13

Causes of death. Typhus fever 1, epilepsy 1, apoplexy 1, consumption 1, found dead, supposed apoplexy, 1, not stated 1.

The legislature of the state having granted permission for "religious exercises to be carried on and conducted at the institution," a chaplain was employed during the year, and Dr. Trezevant expresses himself "gratified with the result."

5. During the past two years very extensive additions and improvements have been made at the Hartford Retreat. Among these, are two new wings, each 120 feet long by 36 wide, together with "connecting wings," by which the former are attached to the old building. These "have effected such a change," says Dr. Butler, "both in the external appearance and internal arrangements and accommodations of the Retreat, that it would be hardly recognized by those who have not watched, from step to step, their progress. They in fact constitute a new era in the history of the institution. Its capacity for the accommodation of patients has been doubled, and the conveniences and appliances for successful treatment, as well as the arrangements for their more comfortable and pleasant classification, have increased in no less a ratio.

"Our means of classification have been greatly improved. We are enabled to make eight distinct classes, and, if necessary, subdivide even these, so that the social affinities of all may be consulted, and such influences associated as will have the most happy action and reaction upon each other."

	Males.	Females.	Total.
Patients in the Retreat, April 1, 1845 -	53	50	103
" admitted during the year -	56	72	128
Whole number during the year - -	109	122	231
Discharged, deaths included - - -	55	60	115
Remaining April 1, 1846 - - -	53	63	116
Of those discharged, there were cured -	24	31	55
Died - - - - - - - -	5	11	16

"The premature removal of patients from the Retreat, continues to be to us a fruitful source of anxiety and regret, and to them fearful and cruel in its results. Of those discharged 'improved,' and 'much improved' several were rapidly convalescing. Contrary to our advice and earnest expostulation they were removed, and the results in most cases have justified our worst apprehensions; several remaining in a weak, nervous condition, and others relapsing into insanity. A recital of a few cases which have been recommitted to our care may prove instructive, and lead others to avoid an error always serious and often fatal in its consequences.

"Case I.—Admitted in a most wretched state of melancholia, unwilling to speak, move or make any effort, and negligent of the calls of nature—under treatment became better, would talk, laugh, sing and walk about, and was rapidly recovering his health. On his being removed, contrary to our wishes and advice, he immediately relapsed, and was, the last we heard of him, a hopeless maniac, caged up like a wild beast.

"Case II.—Admitted a violent maniac, noisy, wilful and dangerous, and from the nature of the cause almost hopeless—became much better, and just as we were rejoicing over the unexpected prospect of recovery, was removed on suspicion that pecuniary considerations influenced our advice. In a few months was returned to us more wretched, noisy and ungovernable than ever. This case may admit of alleviation, but recovery is hopeless."

Two other similar cases are related in the report.

The whole number of patients admitted since the retreat was opened, April 1st 1824, is 1560. Of these 846 recovered and 120 died.

The causes of death of 51 patients, being all that have died during the past five years, are as follows: viz., epilepsy 1, apoplexy 5, phthisis 4, old age 4, injury 1, fever 3, psoas abscess 1, disease of the brain 5, internal hemorrhage 1, marasmus 2, fracture of thigh 1, general debility 4, general paralysis 4, exhaustion 7, inflammation of bowels 2, disease of lungs 3, suicide 3.

The report contains many valuable tables, illustrative of particular points relating to insanity. In discussing the causes of mental disorder in the United States, Dr. Butler makes the following very sensible remarks:

"As a community we have too little recreation, too little regard for the refreshing and invigorating influences of social intercourse; and far too little time is given to the enjoyment of literary and scientific pursuits. Our devotion to business of every kind, is too long continued and too absorbing. We rise early and set up late, and eat the bread of carefulness, and eat it hastily, that we may carry out those plans of advancement which are so engrossing. The deep traces of care and anxious thought are written on the brow, and their corroding influences consume not only the elasticity of our frame, but, in too many instances, it is to be feared, the better feelings of the heart. These influences pervade society in this country, more than any other on the globe. They draw within their vortex many who would gladly escape them, and, increasing with the flood-tide of national prosperity, threaten to engulf the better feelings and sympathies of the nation in the maelstroom of ambition and gain. Remonstrating one day with an intelligent young merchant on the folly and danger of devoting himself so exclusively to his business, to the neglect of exercise and the enjoyments of the family circle, he confessed that it was wrong, but pleaded that the eager competition that existed around him required the devotion of all his time and energies to sustain his character as a business man. 'I never allow myself more than five minutes for any meal,' said another, who in one month was a raving maniac."

6. The Maryland Hospital (for the Insane), as appears from the report of Dr Fisher, is in a flourishing condition, the number of patients during 1845 having exceeded by 33 that of any former year. Exclusive of cases of mania-à-potu which, according to Dr. F., are always omitted in his reports, the statistics are a follows, viz:

	Males.	Females.	Total.
Number of patients Jan. 1, 1845	52	35	87
" admitted during the year	54	37	91
Whole number	106	72	178
Discharged inclusive of deaths	49	20	69
Remaining Dec. 31, 1845	57	52	109
Of those discharged there were cured	27	13	40
Died	8	2	10

Causes of death.—Apoplexy 2, paralysis 2, chronic diarrhœa 1, pulmonary consumption 1, marasmus 1, epilepsy 1, old age 1, exhaustion from long-continued excitement 1.

The whole number of patients during the eight years, from 1838 to 1845, inclusive, is 644. Of these, 305 were cured and 53 died.

Dr. Fisher, like the physicians of most of the American asylums, in reference to their respective institutions, complains of the premature removal of patients. In the hope of assisting to overcome this evil, we quote his remarks upon the subject, as we have already quoted the remarks of others.

"The premature removal from the institution of convalescents is an evil which we, not unfrequently, have to deplore. In some instances they are, unfortunately, removed in consequence of the inability of the friends to support them any longer in the hospital; but in too many other instances, from the friends acting upon their own judgment of the condition of the patient, in opposition to the judgment and advice of the physician. They, perhaps, pay a short visit to the patient, during which they find him free from illusion, composed, cheerful, rational; they learn that he has been for some time employing himself steadily and usefully, and they immediately conclude, as they are unprepared to distinguish between convalescence and perfect recovery, that he is well enough to go home, and frequently persist in removing him. But it often happens that a few days or weeks only are sufficient to convince them of their error. The company and exciting conversation of old friends, and the revival of old associations, prove too much for the mind in its weakened state, and soon the derangement returns, perhaps with more intensity than ever. 'If,' says Dr. Ray, 'we are entitled to any confidence at all, we claim it in regard to our opinions on this point. If the friends are better judges than we are as to the proper time for removing a patient, then are they also more competent to direct the management of the case in its previous stages. Since, however, the latter are immediately entrusted to our management, what can be more inconsistent or absurd than the idea that in the latter stage of the disease, no further dependence need be placed on our judgment. The fact is, that the convalescent stage is that in which there is most liability to mistake, and in nothing is the judgment of the physician more closely exercised, than in determining where convalescence ends and perfect recovery is established. On a point so important and delicate as this, we conceive that our ampler means of information render our opinion worthy of some consideration. If incorrect, it can, at the worst, merely occasion a few days or weeks unnecessary detention, and every one must know how much less an evil it is to keep a patient too long than to remove him too soon."

After a connection with the Maryland Hospital during a term of ten years, a decennium of untiring industry in his vocation, and of ardent devotion to his duties, Dr. Fisher, in this report, resigns his situation. He has already left the institution, and been succeeded by Professor Fonerden, a gentleman well known for his attainments, not only in medical, but in general science.

7. Dr. Chandler having retired from the New Hampshire Asylum for the Insane, his place is supplied by Dr. Andrew McFarland, whose name is appended to this, the fourth annual report of the institution:

	Males.	Females.	Total.
Number of patients in asylum May 31, 1845	39	37	76
" " admitted during the year	51	47	98
Whole number during the year - -	90	84	174
Discharged, including deaths - - -	40	36	76
Remaining May 31, 1846 - - -	56	42	98
Of the patients discharged there were cured	16	10	26
Died - - - - - - -	6	5	11

"The average number of patients has been about twenty per cent. greater than last year; while the number discharged has been nearly equal. The number of admissions has exceeded that of last year. These results have been owing to the greater readiness of the friends of the suffering insane to grant an extended trial of the benefits of the asylum, as well as the more confirmed public sentiment of its utility."

The asylum was opened in Oct. 1842. Since that time 376 patients have been admitted and 112 cured.

Dr. McFarland gives the following account of the appearance and progress of variola in the institution. "On the 9th of January, with a household, including officers, patients, and attendants, of 125 persons, a case of small-pox made its appearance in the gallery occupied by the better class of patients. Fortunately, its character was detected on the first appearance of the eruption, and an opportunity afforded for immediate precautionary measures. The affected person was removed to the new building, and an express messenger dispatched to the health office, Boston, who returned the same day with a supply of pure vaccine virus. Thorough vaccination, with the isolation of the affected cases, prevented the disastrous consequences which must otherwise have ensued from a disease of so much malignity, under circumstances so favourable to its extension.

"The individual first afflicted died on the twelfth day of the disease. His case was of the confluent kind, and no hope of his recovery could be entertained from the first inception of the malady.

"Seven cases followed, as the result of the one just mentioned. Two of these proved fatal, which would probably have terminated otherwise but for the previous existence of exhausting bodily infirmity.

"After being free from all appearance of the disease in the asylum for more than two months, it again made its appearance in an infirm old woman of 70, in whom it terminated fatally. How the disease could have originally introduced itself is a subject of some mystery. The first individual afflicted had visited the village two weeks prior to the attack, or a period just sufficient for incubation to take place, which renders it highly probable that the disease was contracted at that time, though no well authenticated case then existed in Concord.

"It speaks well for the character of those employed as assistants in the asylum, that in a season eminently calculated to spread consternation among those of the stoutest heart, none abandoned their post of duty; and several who were absent when the disease made its appearance, returned and resumed their places, when all were filled with gloomy forebodings.

"Exertions, such as nothing but the existence of such a calamity could have called for, were not without ill consequences upon the health of our household; and the month of February closed upon us with the assistant physician and five of the attendants wholly or in part disabled by sickness."

Much of the remainder of the report is occupied with judicious remarks upon insanity, its causes and treatment; but as similar views of the subject have heretofore been presented, it is unnecessary to exhibit them at this time.

P. E.

ART. XXVI.—*Human Physiology; with three hundred and sixty-eight illustrations.* B ROBLEY DUNGLISON, M. D., &c. &c. Sixth Edition, greatly improved. 2 vols 8vo. pp. 651–694. Philadelphia: Lea & Blanchard, 1846.

It is not always that a new edition of even a scientific work can with propriet be termed an improved edition. Not unfrequently each successive edition i printed from the same stereotype plates, the only change being in the title-pag and perhaps the preface. Such is not, however, the case with the work before us each edition has been carefully revised; and everything of importance that ha been recorded since the appearance of the preceding edition embodied in it, s that the last will be found invariably to be on a level with the then existing state physiological science.

As a text book for students the work of Dr. Dunglison will always maintain i place among the numerous very excellent manuals of physiology, that hav recently appeared; and for those out of the profession who desire to becom acquainted with the organization and functions of the human body, it is perha better adapted as a guide than many of its cotemporaries. But the work is t well known to require any extended notice of its peculiar merits on the prese occasion—we need only remark that the present edition exhibits the same care its preparation that was bestowed upon the last, and may be received as a very full and fair exposition of the present advanced state of the science of which it treats.

We observe that to the present edition a large number of new illustrations have been added, and that many of the former cuts have been replaced by others.

D. F. C.

Art. XXVII.—*Small Books on Great Subjects. The connection between Physiology and Intellectual Science* From 2d London Edition. Lea and Blanchard, 1846: pp. 85.

On Man's Power over himself to Prevent or Control Insanity. By Rev. John Barlow, M. A. Lea and Blanchard, 1846: pp. 54.

An Introduction to Practical Organic Chemistry, with references to the works of Davy, Brande, Liebig, &c. Lea and Blanchard, 1846: pp. 66.

The above works, occupying the places, number 2, 3, and 4, in the series of "*Small Books on Great Subjects, Edited by a few Well-Wishers to Knowledge,*"—a series which we are told has met with much success in London—are, in their subject-matter, more or less connected with medical science, and deserve a passing notice in a medical journal. As a general principle we are strongly inclined to doubt the policy of making science popular. We believe that there is no royal road to learning, and that he who would taste of knowledge or would become familiar with great truths, must toil as others have done before him, though his predecessors may have made the path somewhat less tedious and rugged. There is a class of men, however, in every community, who are so educated that they derive pleasure, useful instruction, and may have their minds directed to higher contemplations by perusing such summaries of science as those under consideration. To such a class do we conceive that these works—the medical ones, for they alone have been examined by us,—are especially addressed and peculiarly adapted.

Two of them, indeed, written by the Rev. John Barlow, contain " each the substance of a communication to the members of the Royal Institution at one of their Friday Evening meetings," meetings devoted to the consideration of scientific subjects. The first, on the "*Connection between Physiology and Intellectual Science,*" gives a clear and simple account of the "machinery by which man is a living, a sentient and an intelligent animal, in other words, of the nervous system, the sympathetic nerve, the spinal marrow and its nerves, and the organ within the encephalon." It spreads before the reader an account of the functions of these different parts based upon the experiments and statements of the most recent and standard authorities; and then shows that man presents other functions than those which are observed in other animals, that he is also an intellectual being, possessed of consciousness and memory, and of an intelligent will. That it is in these last we must look for the " unknown potent cause" of the difference from other animals in his actions: in this independent " persevering and remembered will," which may indeed cause an impairment of the bodily organs through which it acts from their incapacity to respond to its urgent, incessant demands, for it is never contented, " still feels dissatisfied, and requires nothing less than infinity for its contemplation—immortality for itself."

An application of this great fact is made in the next work, "*On Man's Power over himself to Prevent or Control Insanity,*" of which the object is to show "that man has in the resources of his own nature, the antagonist power which, if properly used, can set at naught the evils, ay, and the so-called irresistible propensities of the bodily organism. So nicely balanced, indeed, is the medium that a grain may turn it to either side, but it is in the power of the will to cast that grain." We will not attempt to follow the author through the train of argument by which he proceeds, but will simply point out in his own words the result.

"The result then of the whole inquiry appears to be that man being a compound of two natures, mental derangement is of two kinds. In the one kind, structural disease deadens or distorts the perceptions, and if this extends itself to the organs of all the faculties, the intellectual force having no longer the means of external action, the individual remains to all appearance a helpless machine. But as such extensive structural disease is hardly compatible with life, so it is of very rare occurrence, and if any part of the organ remain perfect, then there is good reason to hope, that a mind thoroughly well-trained in early years will still contrive to make the little that is left available to conduct, if not to the higher intellectual functions; as we see the loss of the right hand replaced in some degree by the increased activity of the left. But in the other case, no structural disease exists in the first instance, and the inefficiency or misdirection of the intellectual force is the sole cause of derangement; sometimes by the violence of the excitement producing disease; sometimes, as I have already noticed, continuing to the last without affecting the bodily organs." p. 39.

What then is the remedy? It is in education, in the improvement and cultivation of the faculties and powers in which man resembles his Creator. That this power of self-control exists even among the most hopelessly insane, is evident to all who are familiar with the benefit and happy results of the modern moral treatment of insanity. May it not therefore be fairly assumed that the same governing and controlling power, properly trained and exercised, may be usefully and happily employed in preventing the occurrence or the manifestations of mental derangement?

The last work named above is a compilation from the best sources, and presents an useful, simple, yet comprehensive exposition of the state of organic chemistry at the present moment. The application of the results of chemical inquiry to agriculture, manufactures, and the arts—generally less thought of, but fully as worthy of study—of preserving health, has been extensively made within a few years past. And the author of this work desires only to place within more general reach the benefits conferred by science, and in so doing he deems that he is fulfilling to the best of his ability the talent confided to him by his great Master. Indeed, there is in all these publications a tone of deep religious feeling, of pure benevolence, and of disinterested philanthropy, which is highly commendable and attractive. They are evidently written by men deeply imbued with a love of their race. and with a desire to magnify their Creator by showing the wonderful skill and perfect wisdom with which he has adapted all things to his ends. These are indeed worthy of dissemination and of perusal. C. R. K.

Art. XXVIII.—*The United States Dissector, or Lessons in Practical Anatomy.* By Wm E. Horner, M.D. Professor of Anatomy in the University of Pennsylvania Fourth edition, with numerous illustrations. Edited by Henry A. Smith, M.D. F. C. P. P., &c. Philadelphia, Lea & Blanchard, 1846: 12mo. pp. 666.

The reputation of the author of this work as a skillful practical anatomist is s extensive and well deserved, that any work on the subject from his pen cann fail to be received with favour.

The present volume was originally published twenty-three years ago under th title of Lessons in Practical Anatomy, since which time it has passed through several editions. The present one has been greatly modified and improved, made t conform with the recent progress of anatomical science, and is enriched with numerous wood-cuts. To the numerous pupils of the professor, it will be a mo useful guide in their studies, and by pursuing the course indicated by it, they ma hope to reach the same eminence which has been attained by their distinguishe teacher.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *General Physiology of the Spinal Cord.*—The general tendency of the investigations of the last year has been to prove that the spinal cord is neither a mere collection of tracts of nerve-fibres nor a single nervous centre, but (if I may use the most popular language of the day) a collection or series of *central stations*, each of which has its own lines of nerve-fibres terminating in it, and serves to receive, and to transmit on numerous lines and in various directions, the impressions which are conveyed by the centripetal nerves abutting on it. The chief evidence for this, which, though not a new view, has hitherto been a very doubtful one, is as follows:

1st. VOLKMANN* has submitted the question whether the nerve-fibres of the spinal nerves remain and end in the cord, or go on to the brain, to the test of a kind of measurement. He weighed four pieces of a horse's spinal cord, each seven centimeters long, and taken respectively from below the 2d, the 8th, the 19th, and the 30th pairs of nerves. Their weights (in the order above named) were 219, 293, 163, and 281 grains; the areas of the transverse sections of the gray matter in them (in the same order) were 13, 28, 11, and 25 square lines; and those of the white matter 109, 142, 89, and 121 square lines. Thus, the quantity of white matter of the cord is absolutely less at the cervical than at the lowest part of the lumbar portion, and much less in the lower than in the upper cervical portion. The contrast was more marked in a comparison of the sum of the areas of transverse sections of all the spinal nerves of a serpent (Crotalus mutus) with that of a section of the upper part of the spinal cord. The former (purposely estimated below the truth) might be reckoned at ·0636 of a square inch; the latter only ·0058. The total size of the nerves, therefore, is at least eleven times greater than that of the cord—a difference which cannot be explained on the supposition that the nerve-fibres, when they pass into the cord, become smaller.

2d. The almost necessary deduction from these facts is that many or all the nerve-fibres terminate in or very near those regions of the cord into which they penetrate; and this is strongly confirmed by the observations of Hanover and Kölliker, already often referred to, both of whom have demonstrated the fine nerve-fibres as prolongations of the processes of some of the nerve-corpuscles of the gray matter of the cord.

3d. A step further is made by the remarkable observations of Volkmann, which have determined at least two examples of small portions of the cord having absolute and uninfluenced control over the movements of parts, to which parts they are the true and sole nervous centres. I refer here to the governance of the rhythmical movements of the lymphatic hearts by the two definite portions of the cord, of which an account has been already given. The evidence is complete that these portions of the cord are as truly the nervous centres for the two hearts as the portion of the medulla oblongata is for the respiratory movements.

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* Wagner's Handworterbuch der Physiologie, art. Nervenphysiologie.

4th. Something of the same kind as this influence of the cord on the lymphatic hearts is indicated by an observation of Budge.[*] If a piece of the cord of a frog scarcely two lines wide, be removed from the place at which the great brachial nerve goes off, it constantly occurs that the pulse of the heart decreases in frequency within two hours after the operation, and this does not happen when all the rest of the cord below this portion is removed.

But if it be thus proved that there are in the spinal cord many central stations, the question still remains, how an impression is conveyed from one to the other, or from any of them to the brain?[†] It is evident, that there are other modes of conveyance besides that through the continuous course of the fibres first impressed; it is not certain that any fibres pass uninterruptedly from the periphery to the brain, yet the impressions are precisely conveyed both to and from the brain; and there is no support in all these facts for the erroneous experiments of Van Deen,[‡] which would have made it appear that not only the nerve-fibres, but the impressions also, stop short in or near the part of the cord on which they fall. Some of his more correct experiments show that even a small length of the gray matter left in the cord, when all around it is cut away, is sufficient for the conveyance of impressions up the cord of the frog, but how the conveyance is effected is as yet a question.—Paget's *Report* in *B. & F. Med. Rev.*, July, 1846.

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2. *Theory of Cell-Development.*—A very lucid exposition of this theory, and of the principal facts concerning the history and nature of the nucleated cell in the structures of animals, has been published by Kölliker.[§] The subject has also been thoroughly discussed by Reichert[||] in his "Report on the Progress of Microscopic Anatomy in 1843," his observations being included in an examination o essays by Karsten,[¶] Kölliker,[**] and Nägeli.[††] The general tendency of the whole is to show that we are yet very far from the knowledge of the true mode of development of the nucleated cell in animals. There is indeed in all these essays, a well as in the personal knowledge of most anatomists, an abundance of fact bearing upon the subject; but many, perhaps the majority, of these facts canno be brought within the expressions of Schwann's theory of cell-development neither can there be yet traced in them any single, uniform, and constant mode o development of the nucleated cell. From the very nature of the case, it seem most probable that one law and one mode must be always observed in the deve lopment of the cell and its parts; if it be so, the one mode is unknown; if it b not so, then, in the place of the fair and comprehensive system of Schwann w have a crowd of unconnected facts such as no memory can contain, and of whic it would be useless, even if it were possible, to give a brief report.

The observations of Reichert, as well as those in the other works just referre to, relate only, or principally, to the genesis of the nucleated cell and its severa parts; and he implies that there is much less room for doubt concerning th metamorphoses of the cell itself, by which, of it or through it, all the more highl organized animal tissues are supposed to be formed. It appears to me, howeve that we can be as little sure of many of the changes which nucleated cells ar said to pass through in the formation of other tissues, as we are of the process b which the cells themselves are formed. The development of all the fibrous tissues appears especially doubtful. For the investigations of every year show th great difficulty or impossibility of confirming the observations by which Schwann explained the development of these and some other tissues, and the equal facility of finding appearances which cannot be reconciled with his theory, or any other single theory yet proposed concerning it.*

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[*] Oesterr. Medic. Wochenschr., 10 Jan., 1846; from Froriep's Noitzen, 1845, No. 78

[†] Hypotheses have been suggested in the year just passed by Drs. Todd and Vollmann, (l. c.), but they both seem to me insufficient for the facts.

[‡] See last Report, p. 50, and Report for 1842-3, p. 20.

[§] In Schleiden and Nägeli's Zeitschrift, Heft ii., 1845; another part is announce for publication, but I have not been able to obtain it.

[||] In Müller's Archiv., 1844, No. vi. Jahresbericht, pp. 148–172.

[¶] De Cella Vitali; Berol., 1843. See last Report.

[**] Entwickelungsgeschichte der Cephalopoden; Zurich, 1844.

[††] Zur Entwickelungsgeschichte des Pollens; Zurich, 1842; and in Schleiden ar Nägeli's Zeitschrift für Botanik, 1844, Heft i.

I have found ample reason for expressing these doubts of the sufficiency of the accepted theories of development in recent examinations of tumours and other morbid growths. Their structure seems peculiarly adapted for testing a theory of cell-development; for they are, doubtless, obedient to the same general laws of formation as the healthy structures are, and, in the unequal and often rapid growth of their several parts, it could hardly happen but that in many specimens all the phases would be seen through which their structures pass towards their fully developed state. But in very numerous examinations I have not found a single example in which a cell has appeared to be forming or formed around a pre-existing nucleus; or one in which fibres have appeared to be formed out of nucleated cells; or one in which nucleated cells have appeared to constitute a stage towards any form of higher development. On the contrary, I have found many instances of rapidly growing structures composed of large collections of fibres without a nucleated cell among or near them: others with abundant nucleated cells, but scarcely any free nuclei or granules, and nothing like a cell incompletely developed round its nucleus; and, again, others (and these of especially rapid growth) with no cells at all, but composed almost entirely of corpuscles like nuclei or cytoblasts.

From these and other observations I am disposed to think that the ordinary (and not the exceptional) mode of development of fibres is, not through nucleated cells, but from a structureless or dimly granular substance which is first *marked*, and then broken up, into fibres. There is good evidence that the cytoblasts which are usually or always imbedded in this substance, influence the development of the fibres; and though I cannot tell how they do so, yet it is certainly not by conversion of themselves into fibres; they shrivel and disappear as the fibres increase and become more perfectly formed.

I think it will be found that, in morbid growths, the nucleated cell is always a terminal, not a transitional, form; for in certain tumours in which the best formed nucleated cells are found, e.g. the epithelial tumours and some examples of medullary cancers, there are no higher forms found, not even imperfect fibro-cellular tissue, except in small quantity about the blood-vessels. Corpuscles having the characters of nuclei or cytoblasts (to adopt still the usual names) appear to be the really energetic bodies in the growth and determination of these morbid structures; they are found in some tumours so abundantly, and so unmixed with nucleated cells, that their power of multiplying and assimilating cannot be doubted; and it is in some of these tumours also that, apparently under the influence of the cytoblasts, the most perfect fibro-cellular tissue is ultimately formed. What I have seen also of the development of these cytoblasts, leads me to agree with that view of the development of nuclei generally, according to which they are described as formed, not on a pre-existent nucleolus, but out of granules collected in a dark or dim mass of the proper size and shape, which then clears up by the formation of a membranous wall and transparent fluid contents with, in some cases, one or more persistent granules holding the position of nucleoli.—Paget's *Report* in *B. and F. Med. Rev.*, July, 1846.

3. *Digestive Powers of the Stomach.*—An account of the condition of the internal surface of the stomach under various circumstances, derived from examining this organ by means of M. Blondlot's method, which consisted in maintaining for a considerable time an artificial opening into the stomach of a dog, has been published by M. Bernard.† This account is not much more than a repetition of the results obtained and made known by M. Blondlot,‡ most of which, as well as the facts

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* A good evidence of this is in the fact that the most original observers, when they speak of the development of the tissues, almost always cease for the time to be original, and copy both the words and drawings of Schwann or Valentin.

† Archiv. d'Anat. Gén. et de Physiol. Janvier, 1846, p. 3.

‡ Traité Anal. de la Digestion, 8vo., Paris, 1844.

stated by Dr. Beaumont, are here confirmed. Thus, M. Bernard found tha during fasting the mucous membrane of the stomach is pallid, folded on itself contains but little blood, and is coated with a thin layer of neutral or slightly alkaline mucus; but directly upon the introduction of any foreign matters, especiall digestible ones, into the stomach, its mucous membrane becomes turgid wit blood, assumes a more marked degree of sensibility, and the layer of mucus i detached, being displaced by an abundant flow of acid gastric fluid; at the sam time manifest movement of the stomach itself takes place. This flow of gastri or digestive fluid, which only takes place when its secretion is solicited by th presence of food, or of some mechanical or chemical irritation, may be influence by many circumstances. Thus M. Bernard found that although, as was observe by Blondlot, a slight mechanical irritation applied directly to the mucous surfac of the stomach excites at once an abundant flow of gastric fluid, yet if this irritation be carried beyond certain limits, so as to produce pain, the secretion, instea of being more abundant, diminishes or ceases entirely, while a ropy mucus i poured out instead, and the movements of the stomach are considerably increased the animal, at the same time, appears ill at ease, is agitated, has nausea, and if the irritation be continued, actual vomiting. Bernard has often, in such case observed bile flow into the stomach, and escape through the fistulous opening He has also found similar disorders of the functions of the stomach to result fron violent pain in other parts of the body; the process of digestion in such case being suspended, and sometimes vomiting excited. When acidulated substance as food rendered acid by the addition of a little vinegar, were introduced into th stomach, the quantity of gastric fluid poured out was much smaller, and the digestive process consequently slower, than when similar food, rendered alkalin by a weak solution of carbonate of soda, was introduced; this effect of alkali in increasing the secretion of gastric fluid was noticed also by M. Blondlot. I however, instead of a weak alkaline solution, carbonate of soda, in crystal or i powder, was introduced into the stomach, a large quantity of mucus and bil instead of gastric fluid, flowed into the stomach, and very often was succeede by vomiting and purging. When very cold water or small pieces of ice wer introduced into the stomach the mucous membrane was at first rendered ver pallid, but soon a kind of reaction followed, the membrane became turgid wit blood, and a large quantity of gastric fluid was secreted. If, however, too muc ice was employed, the animal appeared ill, shivered, and digestion, instead being rendered more active, was retarded. Moderate heat applied to the mucou surface of the stomach seemed to have no particular action on digestion, but high degree of heat produced most fatal effects; thus the introduction of a littl boiling water threw the animal at once into a kind of adynamic state, which w followed by death in three or four hours; the mucous membrane of the stoma was found red and swollen, whilst an abundant exudation of blackish blood h taken place into the cavity of the organ. Like injurious effects, to a greater less degree, followed an introduction of other irritants, such as nitrate of silver ammonia, the digestive functions being at once abolished, and the mucous su face of the organ rendered highly sensitive.—KIRKE's *Report* in *Ranking's A stracts*, vol. iii.

4. *Absorption of Narcotic Substances by the Lymphatics.*—It has been stated Emmert, Behr, and others, from the results of experiments, that the lympha vessels either do not absorb narcotic poisons at all, or to so slight an extent, th no poisonous effects are produced. Henle explains this by considering that na cotic substances in solution are certainly received into the lymphatics by the pr cess of endosmose, but that the walls of the vessels are at once paralyzed thereb and rendered unable to propel the poisonous solution onwards. BISCHOFF,* ho ever, has recently performed some experiments on dogs, the results of whi would seem to show that narcotic poisons are really taken up by the lymphati conveyed by them into the blood, and exert their poisonous effects on the syste Having tied the abdominal aorta below the origin of the renal artery, he insert into a wound of the leg a strong solution formed of equal parts of nitrate

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* Schmidt's Jahrbucher, No. iv. 1846, p. 6.

strychnia and ferro-cyanide of potassium; in half an hour symptoms of narcotism ensued, and the animal died shortly after in a state of tetanus. Ferro-cyanide of potassium was detected in the urine, in the clear watery lymph obtained from the lymphatics between the wound and the aorta, but not in the blood. This experiment proves that ferro-cyanide of potassium, even though contained in a solution with strychnia, may be absorbed by the lymphatics, conveyed by them into the blood, and eliminated by the kidneys; that the strychnia itself must also have been absorbed by the lymphatics, unless we can suppose it to have got into the blood through some collateral circulation after tying the aorta: and that a substance may be found in the urine, although it cannot be detected in the blood.—*Ibid.*

5. *Minute Anatomy of the Kidneys.*—The minute anatomy of the kidney has rceived considerable attention during the last few months, and the result is the appearance of several interesting papers on the subject. The most important of these is one by Dr. Bidder,* of Dorpat. Having examined the kidneys of tritons, (which animals are especially well adapted to the investigation, inasmuch as from the natural form of the kidney they can be examined at once by the microscope, without undergoing any artificial preparation, which generally destroys the natural arrangement of parts,) he has obtained results which on the whole confirm the accuracy of Mr. Bowman's observations, although they differ in one important particular. According to Mr. Bowman's account the tuft of vessels composing each Malpighian body lies free and uncovered within the cavity of the dilated extremity of the urinary tubule, which forms a kind of capsule to it; Bidder, however, states that the tuft of vessels is in reality quite external to the cavity, being separated from it by the tunica propria of the dilated extremity of the urinary tubule; this membrane, therefore, according to him, is not perforated by the artery and vein supplying the tuft, as stated by Mr. Bowman, but by its external surface reflected over the tuft which projects into the cavity of the tubule, carrying the membrane before it, just as an organ (say the heart), covered on its external surface by serous membrane, projects into the cavity of the serous sac (or pericardium). The Malpighian tuft, thus invested, occupies sometimes half, sometimes much less, of the cavity of the dilated portion of the tubule, and at first sight appears exactly as if lying free and uncovered within it, but that it is really external to the cavity (at least in tritons) Bidder quite convinced himself, and he states that he has sometimes succeeded in separating the vascular tuft from the extremity of the urinary tubule, yet without the cavity of the latter being opened, or any of its fluid granular contents escaping. He says that one-third or one-half of the internal surface, as well as the neck of the capsule, bears ciliary epithelium (as noticed by Bowman in the kidneys of frogs), and that the remainder of the cavity is lined by a layer of fine tesselated epithelium, the cells of which have a tolerably regular polygonal form. Although commonly each tubule is in relation with its own tuft, yet sometimes one tuft is common to two tubules, or, what Bidder seems to think more probable, the dilated part where the tuft comes into relation with the tubules, is not the joint extremities of two, but a pouch-like dilatation at the side of one tubule; he thus, to a certain extent, confirms the observations of Gerlach† on this point.

Ludwig‡ having also examined the minute anatomy of the kidney in many mammalia and amphibia, observes that the mode of termination of the urinary tubules described by Bowman may be very distinctly seen in the kidney of the coluber, and that in the other amphibia examined by him, and in mammalia, such an arrangement of the terminal extremities of the tubules appeared probable, though he was not able clearly to make it out; whilst in some few it did not seem to exist.

The subject has also received a valuable contribution from Kölliker,§ who details the results of his examinations of the kidneys of fœtal lizards. He confirms Bowman's account so far as concerns the structure of the urinary tubules, and the

* Müller's Archiv, Heft v., 1845.

† Last Report, p. 308.

‡ Wagner's Handwörterbuch der Physiologie, art. "Nieren," p. 630.

§ Müller's Archiv., No. 5, 1845.

close connection between the extremities of these tubules and the Malpighia bodies, yet he agrees with Bidder, Gerlach, and others, in denying that thes vascular tufts lie bare within the cavity of the dilated portion of the tubules Although he does not recognize the existence of the membranous partitio between the tuft and the cavity, described by Bidder, yet he states that the cavit is freely lined, as also is the surface of the vascular tuft covered, by an abundanc of epithelium, so that the tuft lies embedded in a mass of epithelial cells (as described by Gerlach).* He mentions that in the kidneys of the animals (lizards which he examined, ciliary epithelium, in a state of active movement, was presen along the whole length of the urinary tubules, with the exception of at their ex from the gland, and just where they dilated into their terminal extremities withi the substance of the organ.†—*Ibid.*

6. *Absence of Corpus Callosum.*—M. Paget has communicated to the Med Chirurg. Society, the details of a case in which the middle portion of the forni and the whole of the septum lucidum were absent, and in which, in place of th corpus callosum, there was only a thin fasciculated layer of white nervous matte 1-4 inch in length, but of which the fibres extended into all those parts of th brain into which those of the healthy corpus callosum can be traced. Behind th imperfect corpus callosum, the optic thalami, the middle commissure (which wa very large), the posterior commissure, and the pineal gland lay exposed afte removal of the velum. The lateral parts of the fornix and the rest of the brai were quite healthy. The patient was a servant girl who died of pericarditis. Sh had displayed during life nothing very remarkable in her mental condition beyon a peculiar want of forethought and power of judging of the probable event things. Her memory was good, and she possessed as much ordinary knowledg as is commonly acquired by persons in her rank of life. She was of good mor character, trustworthy, and fully competent to all the duties of her station, althoug somewhat heedless; her temper was good, and disposition cheerful. From the facts Mr. Paget is inclined to regard the functions of the corpus callosum as co nected with the highest operations of the mind, especially as in the few cases which it has been found deficient, or altogether absent, the mind has possessed moderate average power and capacity for knowledge, and all the lower functio of the nervous system have been perfectly discharged.—*Ibid.*

ORGANIC CHEMISTRY.

7. *Presence of Copper and Lead in the Bile.*—Last year Bentozzi made the di covery that copper is contained, in a tolerably large amount, in brown bilia calculi; he was never able, however, to detect this metal in the bile itself. I the announcement of Bentozzi's discovery Heller was induced to pay attention the subject, and after a careful examination was led to a similar conclusio namely, that the coloured biliary calculi contain a large amount of copper.‡ T method adopted by Heller for the detection of copper was more simple than t one employed by Bentozzi. Heller directs several of the darkest calculi to rubbed together into a rather coarse powder, and then burned in a platinum cr cible previous to the addition of nitric acid. The ash of the combustion is to treated with a little nitric acid to remove any remains of carbon, then dissolv in water acidulated with nitric acid, neutralized, and finally tested for copper the ordinary reagents.

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[*] Last Report, p. 309.

[†] The high interest of the above papers must be the excuse for the length at whi they have been noticed. They contain much other valuable matter, which it did appear necessary to notice here, but which will well repay a careful perusal. [Sin the above was written, M. Hyrtl, in a strange paper on the "Physiology of the Urin Secretion," (translated in the Medical Times, April 4, 1846,) denies absolutely existence of any connection between the Malpighian body or the capsule covering and the extremity or any part of the urinary tubule.]

[‡] Archiv. fur Chemie und Mikroscopie, vol. ii. p. 238.

Heller has since continued his researches on the subject, and has extended them to an examination of the bile itself for copper and other metallic substances.* He repeatedly examined the bile both of children and adults, who died of various diseases, and he states that in the bile of adults he has many times detected copper, but never hitherto in that of children. The mode of examination which he adopts is the same as that pursued in the case of biliary calculi. He observes, that after combustion of the bile, and before he applied the tests for copper, he could always tell if this metal were present, by the fused residue, when cold, assuming a light blue or bluish-green colour; when this change of colour did not ake place, no bile was discovered by the employment of tests. To detect the presence of copper he found it necessary to employ the bile not merely of one out of several gall-bladders, and only that which after combustion underwent the change of colour above mentioned. He never detected so much copper in the bile, however, as he found in the dark biliary calculi.

Heller also mentions having examined the urine and blood of a young man, a house-painter by trade, who was severely afflicted with lead colic; he was not able to detect a trace of lead in either of these fluids, but after the patient's death he examined the bile, and found there both lead and copper. He observes that copper and arsenic having been already most clearly found in the liver in cases of poisoning with these substances, it seems probable that those metallic salts which are foreign to the composition of the blood, and useless to the system, are, even when present in small quantities, gradually separated from the blood by the liver, and so removed from the system. This supposition will account for the immunity rom the ill effects of lead, so long enjoyed by those persons who make free use of this metal in their trades, the poison which in these cases is gradually taken into the system being as gradually removed by the liver. The same applies also to copper; and, as Heller observes, it seems highly probable that we are from time to time taking in minute quantities of the metal in our food, and that this becomes eparated from the blood by the liver, and so is found in the bile. The fact that this metal is not always found present in the bile is in favour of this supposition, and a proof that copper is not a necessary ingredient in this fluid, as most probably it is not also in any other of the fluids or tissues of the healthy body; the ame may also be said of lead.] This fact, that metallic salts which are foreign to the system are deposited in the bile, is of considerable therapeutic importance; worthy of regard also is the circumstance that the yellowish-brown, the brown, and the black gall-stones, always contain copper, and that the amount of this metal is proportionate to the dark colour of the calculi. Those white cholesterine gall-stones, which possess merely an external white crust, and have their centre or nucleus f a darker colour, contain copper only in the latter part, which is tinged brown by the bile-colouring matter: the outer white layer containing not a trace. Almost ll the white gall-stones possess this central brown nucleus. Moreover, in the ark-coloured gall-stones copper is always contained, though not in the bile of the ame subject; a circumstance which renders it probable that the copper has some influence in the formation of the biliary concretions.

Heller suggests the importance of instituting a series of experiments on animals to consist in administering to them in their food minute quantities of lead, copper, nd other metallic salts, with the object of determining whether these salts are eparated from the blood by the liver, and if so, which of them are so especially. —*Heller's Archiv.* 5 and 6, 1845.†

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8. *Analysis of the Urine in Dropsy after Small-pox.* By Dr. Heller.—The patient was a young girl, who after the subsidence of a severe attack of variola, became the subject of general anasarca. The urine was of a pale fawn-colour, turbid, ad an acrid reaction, and deposited an abundant coarse-grained sediment; possessing therefore most of the general characters of the urine in Bright's disease. A microscopic examination of the sediment detected heaps of urate of ammonia,

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* L. c. p. 321, et seq.

† In a more recent number of the Archiv. (Heft 1, 1845), Heller's statement of the resence of copper in human bile is confirmed by Dr. Gorup-Besanez, who observes that he has frequently detected it there.

intermixed with which were numerous colourless crystals of uric acid: cylindrical tubules of epithelium from the canals of Bellini, to which also adhered crystals of uric acid; also pus-cells, blood-corpuscles, and pavement epithelium. The urine contained also a quantity of uroxanthin. Its acid reaction remained even after it had been kept four days in a warm room, at the end of which time numerous crystals of uric acid were found deposited on the sides of the vessel. Its specific gravity was 1012. On the addition of nitric acid its colour was changed to violet, and a quantity of albumen was thrown down in the form of a violet-coloured precipitate. On chemical analysis 1000 parts of the urine were found to consist of water 961·80, solid constituents 38·20. Of the solid constituents 10·53 parts consisted of urea, 0.55 of uric acid, 6·80 of albumen mixed with colouring matter o the urine, and with a small quantity of hæmatin, 17·76 of extractive matters, and 2·56 of fixed salts. Among the salts there were only traces of the chlorides found As the patient recovered, the urine gradually resumed its normal characters; the specific gravity rose, whilst urea and the salts, especially the chlorides, graduall increased in quantity; though long after the urine contained a large amount o albumen. The chemical and microscopic characters of the first specimen of urine examined in this case were very similar to those presented by urine in Bright's disease, with the exception of urea being in about its normal proportion,—which according to M. Becquerel, is 10·366 in 1000 parts of the urine of women.—*Heller's Archiv.*

MATERIA MEDICA AND PHARMACY.

9. *New method of making Iodide of Iron, in a state of Purity.* By M. Kop.—It i known that the proto-iodide of iron, prepared in the usual way, cannot be obtained solid in a state of purity. The limpid and colourless solution first formed acquires a portion of oxygen from the air, and a part of the iron is thus oxidized while, at the same time, a portion of biniodide of iron is formed, so that the product consists of a mixture of iodide and biniodide of iron with peroxide of iror If this mixture be dissolved in water, the solution will be of a yellowish-re colour, more or less deep, according to the quantity of biniodide, or even of fre iodine present; the solution will also be turbid on account of the peroxide of iro held in suspension.

The author recommends the following method of preparing pure iodide iron:—Triturate four parts of iodine with two parts of water in a large dish; the add, at once, one part of iron filings in a state of fine division, and continue th trituration. In a few moments there will be manifested a considerable elevatic of temperature, together with the disengagement of the vapour of iodine. Som times, especially if the temperature of the atmosphere be low, the heat develope from the mixture is insufficient to cause the disengagement of iodine vapour; b in this case, it is only necessary slightly to heat the mixture, immediately aft the addition of the iron flings. The mixture is at first liquid, but it soon becom solid.

There exists, in the proto-iodide of iron thus prepared, a small quantity of iro which may be easily separated by a filter, when the salt is used in solution, ar the filtered liquor will then be colourless, and free from any mixture of biniodid or of free iodine.

This preparation may be easily administered in the form of pills, made wi any proper excipient.*

The occasional effect of this medicine on the teeth is singular. Righini relat the case of a lady affected with a strumous affection, who was taking with a vantage the proto-iodide of iron in the form of pills. After having gradually au mented the dose, she all at once perceived that her teeth, which were previous very white, had become quite blue. Alarmed at this result, she applied to t medical man, who soon assured her that the unexpected effect was purely ac dental, arising from the liberation of a little iodine, which was exhaled in t state of vapour. The blue colour was immediately removed by using a solution of carbonate of soda.—DAY's *Report* in *Ranking's Abstract*, vol. iii.—*Journal de Chimie Médicale.*

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* Schmidt's Jahrbucher and Journ. de Chimie Médicale.

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10. *Sulphate of Iron for Excessive Perspiration*, prescribed in the following manner, is highly recommended by Professor LIPPICH:

R.—Gray cinchona, 30 grammes, or nearly ℥j.
Water 300 " ℥x.

Boil for eight or ten minutes, filter and add

Sulphate of iron, 40 centigrammes, or about gr. vi.
Simple syrup 30 grammes " ℥j.

Mix, to form a drink, of which a half coffee-cupful is to be taken every two hours.—*Ibid.*

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11. *Tubercle.*—The following is HASSE's[*] description of the tubercle: The chief organic constituents are fibrine, caseine, and fat, with a small proportion of albumen; the inorganic compounds are chloride of sodium and phosphate of soda, phosphate and carbonate of lime, oxide of iron, &c. The microscopic character of tubercle varies with the different phases of its development. At first tubercular matter closely resembles recent inflammatory exudation, but it differs from the latter chiefly in being insoluble in acetic acid. More mature tubercle consists of a distinctly granular matter, assuming different shapes, but generally the rounded or oval form. The cells are filled with a finer granular matter, about $\frac{1}{2000}$th of a ine in diameter. No change is produced upon them either by acetic acid or the ieutral salts, but they are quickly destroyed by the mineral acids, and liq. potassæ. The chalky and transformed tubercle is composed mainly of this granular matter vith crystals of cholesterine and remnants of the tissue in which they are deosited. The remainder of this author's observations apply more particularly to ubercle of the lung, and will therefore be more properly given under the head of pecial pathology.

The much disputed question of the inflammatory origin of tubercle is negaived by the researches of Mr. Rainey,[†] who has observed that the comparatively ealthy appearance of the capillaries surrounding a mass of tubercle, in reference o the tortuous and unequally dilated state of vessels going to parts in which ibrine is deposited as the result of inflammation, are subversive of the doctrine vhich attributes the deposit of tubercle to that process.—*Ranking's Abstract.*

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

12. *On the Capacity of the Lungs, and on the Respiratory Movements with the view of stablishing a precise and easy Method of detecting Disease by the Spirometer.* By JOHN UTCHINSON. (*Proceedings of Med. Chirurg. Soc.*, Ap. 28.)—After giving an introuction to the subject by a history of respiration, from the earliest period to the resent, with an account of what researches have hitherto been instituted upon his inquiry, the author commenced by dividing the different portions of respired ir under certain heads, without which the subject of respiration becomes very omplicated and difficult of expression. He remarks—"The latitude of moveent performed by the walls and floor of the chest, to maintain a constant current f air through the air cells of the lungs, admits of three common degrees of exression:—1. Extreme expansion, or enlargement; 2. Extreme contraction, or iminution; 3. An intermediate or quiescent state.

"These divisions necessarily superinduce a difference in the quantity of air espectively drawn in or thrown out of the lungs." These movements or portions f air he described, for perspicuity, under five heads:—

1. Residual air; 2. Reserve air; 3. Breathing air; 4. Complemental air; 5. ital capacity.

This division was clearly illustrated by different diagrams, and may be expressed est in the author's own language:—

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[*] Pathol. Anat., p. 326. [†] Med. Chirur. Trans., Sec. Series, vol. x., p. 594.

"It is well known that the lungs are not capable of being emptied by the most violent muscular effort; therefore, at all times, as long as the lungs maintain their natural structure during life or death, a certain quantity of air remains in these organs, which is termed 'residual air,' and over which we have no control.

"'Reserve air.'—The gentle respiratory movement regulating the ordinary breathing, is an intermediate effort between extreme voluntary thoracic contraction and dilatation, and hence it is that a portion of air always remains in the lungs after the gentle expiration, which may be thrown out if required; to it I have applied the name 'reserve air.'

"3. 'Breathing air.'—That portion required to perform the ordinary gentle inspiration and expiration, which we term, 'breathing air.'

"4. 'Complemental air.'—That portion which can at will be drawn into the lungs by a violent exertion, beyond the moderate effort of ordinary breathing, which constitutes the deepest possible inspiration, is only occasionally added if required; to this we apply the term 'complemental air.'

"5. Vital capacity in all these three latter divisions combined, being the greatest voluntary expiration, following the deepest inspiration, to which I apply the term 'vital capacity.'

"These divisions differ in their character. The residual air is independent of the will, and always in the chest. The reserve air, to use a simile, is a 'tenant at will.' The breathing air constantly passing out and in the chest. The complemental air seldom in the chest, and when it is, only so for a brief period." The connection of these with diagnosis in disease here followed, and the whole subject of the paper, resolved itself under the following heads:—1. The quantity of air expelled from the lungs in connection with other physical observations on the human frame. 2. The absolute capacity of the thorax, cubic and superficial measurements. 3. The respiratory movements and mobility of the chest. 4. The inspiratory and expiratory muscular power. 5. The elastic power of the ribs, and the voluntary muscular respiratory power. 6. The function of the intercostal muscles. 7. General and practical deductions in reference to detecting disease in man.

Each of these subjects was fully treated, and much valuable information, both for the physician and the physiologist, will be there found, but which we must here pass over, and simply add, that Mr. Hutchinson has examined upwards of 2000 cases with reference to respiration, and that the quantity of air exhaled from the lungs is affected by four circumstances—height, weight, age, and disease. By height, in the arithmetic progressions of eight cubic inches for every inch of height. By weight, nearly in the ratio of one cubic inch for every pound to eleven stone, and then decrease nearly in the same rotation up to fourteen stone. By age (from thirty-five to sixty-five), a decrease of rather more than one cubic inch per year.

Under the second head, much curious and new matter appeared in relation to the actual capacity of the thorax and the vital capacity, and the relative size of the chest to the body. Under the third head, the respiratory movements of the sexes, and relative movements in health and disease, as measured by the spirometer. Under the fourth head, the muscular power in relation to health. Under the fifth head, entirely new considerations of the combined forces of elastic or involuntary power, and muscular or voluntary respiratory power. Under the sixth head, the intercostal muscles being true expiratory muscles. Lastly, general and practica deductions.

Here Mr. Hutchinson gave many interesting cases of the spirometer detecting phthisis pulmonalis, before the ordinary means now in vogue, and many other subjects relative to the application of his instrument to disease generally in the human frame, which he demonstrates as very broadly marked by twenty-five o thirty per cent. Mr. Hutchinson's spirometer was exhibited before the Society and its methods of application explained.

Dr. Taylor considered the Society much indebted to Mr. Hutchinson for the laborious investigations which he had undertaken, and now submitted to them with such ample illustrations. From the fact that an abstract only of this pape could be read, and from the novelty and the variety of the views submitted to them it could not be expected that the members could appreciate at once the true valu of the observations of the author. The importance of the results arrived at coul not be doubted, if they should turn out to be true; but the results of an investigation so entirely original ought to be received with due caution, until they have been confirmed by other observers. Some very curious results arrived at by Mr. Hutchinson, might be adduced, to show the great importance, in a science like medicine, of our being guided by observation alone; for although they are not inconsistent with any known principles, they are very different from the conclusions at which we should have arrived by *à priori* speculation; such, for instance, is the law that the quantity of air which can be expired bears but little relation to the girth of the thorax, but is influenced mainly by the *height* of the individual.

Perhaps the most important fact discovered is this—viz., that if the height of the individual be known, the number of cubic inches of air which he is able to expire in the healthy state can be calculated with tolerable accuracy. The principle of this calculation is founded upon a great number of observations, and we have just had the fairest and most convincing proof of its correctness. The gentleman who has just now offered himself to be experimented upon, has actually expired within a cubic inch of the quantity of air calculated beforehand.

The application of this principle in the diagnosis of disease is most important. Mr. Hutchinson has found that persons who are the subjects of phthisis expire a quantity of air very much less than they ought to do if healthy. In one interesting case (that of Freeman), the quantity of air expired when he was in health was actually measured, and the experiment being repeated some time after, this man was found to expire ninety cubic inches less than on the first occasion; at this time no disease in the lungs had been detected by two experienced auscultators; the man, however, was not in good health, and some month afterwards he died of phthisis, as proved by post-mortem inspection. I myself examined a number of consumptive patients by Mr. Hutchinson's apparatus; I have found them to expire much less air than, by calculation, they ought to do if in health. Another singular and very important result is this, that the quantity of air which a man can expire is not necessarily proportioned to the absolute size of his lungs or the number of cubic inches of space in his chest. We have seen, in the casts exhibited, that the lungs of one man who expired a large quantity of air were actually much smaller than the lungs of another man who expired a far less quantity. Mr. Hutchinson believes that the quantity expired depends less upon the size of the chest or lungs than upon the mobility of the thoracic walls. The diminished quantity of air expired in phthisis seems to result less from the space occupied by the tubercular deposit than from the restriction which is in some way imposed upon the thoracic movements. The bulk of the tubercular deposit in one case was only equal to one cubic inch, whilst the diminution in the quantity of expired air was forty-seven cubic inches. Hence, by this apparatus, it may turn out to be possible for us to distinguish phthisis at an earlier period than by any other means; and this has been actually proved in one of the instances adduced.

The same principle, however, complicates very much the application of Mr. Hutchinson's results in the differential diagnosis of disease. Many diseases, without the chest as well as within it, may limit the respiratory movements, and so lessen the quantity of air expired. So that, for the present, a great diminution of the expired air can only be considered to indicate the existence of disease somewhere: the seat and nature of this disease must be determined by other means, unless further investigation shall render the indications of the spirometer more precise than they are at present. As much has been accomplished in this direction as we could look for from one individual, and in a limited time. Mr. Hutchinson has done enough to make it incumbent upon physicians generally to prosecute the investigation, so as to lead to the confirmation or invalidation of his views, as well as to their extension and limitation in particular cases. In the hospital to which I am attached, one of the spirometers has been purchased, and a certain number of observations have been made, which, as far as they go, quite confirm those of Mr. Hutchinson.

A great advantage in the use of the spirometer in disease of the chest is this, that comparatively little education is required for it. The practice of auscultation requires a long education and constant application; the spirometer may be used, for the purposes to which it is applicable, with very little previous study. Hence the importance of the instrument, as pointed out by the author, to army and navy surgeons, to insurance companies, and in private practice, generally.

After the paper had been read, Mr. Hutchinson illustrated the method of making an examination. Taking himself as an example, he observed, that though his chest was small, (thirty-three inches in circumference,) yet, according to his mere height, his vital capacity was 260 cubic inches; noting, at the same time, that the person being examined should hold himself as erect as possible, the least inclination of the head causing a difference in the quantity of air expired. A Fellow of the Society having complied with the request to come forward and submit himself to experiment, his height was found to be five feet five inches, and accordingly the quantity of air he could expel should, by the tables, be 206 cubic inches. The gentleman then breathed into the spirometer, and actually produced 205 cubic inches, which, making allowance for temperature, made it 206 cubic inches. This was so satisfactory, as to leave no doubt on the mind that these tables must have been calculated with care, and upon an extensive number of cases. Many questions were put to the author upon the different subjects of which the voluminous paper treated.

Dr. Chowne requested to know whether any explanation could be given for the following curious phenomenon, which was strikingly apposite, touching the relation of the chest to the respiratory power,—Why the mere height bore so strict a relation to vital capacity, and not to the size of the chest.

Mr. Hutchinson, in reply, observed, that he had found this hitherto inexplicable. It was a fact, that the taller a man, the more air he could expel from his lungs: and he considered that this quantity was directly dependent upon the extent of thoracic and abdominal mobility, and not upon the actual capacity of the cavity of the thorax. He referred to a series of casts taken from the chest—the heart and lungs having been first removed, and their space filled up with plaster of Paris. He exhibited one cast, taken under most favourable circumstances; the individual while living, and apparently in health, he had measured; his vital capacity, making correction for temperature, is 251 cubic inches; while the actual cubic space in his chest for the organs of inspiration was only 248 cubic inches, being three inches less than the actual quantity breathed; therefore this marked a respiratory mobility exceeding the actual capacity of the thorax. Therefore, while the spirometer measures the vital capacity, it becomes at the same time a measurer of the mobility of the parts concerned in the breathing act. Now to measure the mobility is to determine the respiratory movement, which he illustrated by drawings, as extending over the whole trunk of the body down to below the knees; therefore whatever interfered in these parts to prevent the range of movement, would, at the same time, be indicated upon the spirometer, and collateral observation would determine more minutely the locality affected. He could not here omit mentioning another circumstance which militated against an opinion prevalent at this day. It was commonly believed that adhesion of the pleura prevented the free movements of the chest; but this he believed was not the case, for he had found that in the instance just mentioned, where the mobility exceeded the actual thoracic cavity, there was no part of the pleura pulmonalis but was firmly adherent to the pleura costalis. So much was this the case, that the heart and lungs could not be weighed separately, their structure being totally destroyed in removing them. Here was a mobility exceeding by three cubic inches the actual space allotted for the heart and lungs, with the parietes and floor of the chest firmly adhering to the lungs. He believed that the latent movement of the ribs was so little, or the latent movement between the contents of the chest and its boundaries so limited, that no adhesion interfered with the respiratory actions. This was worthy of attention, the contrary opinion appearing to prevail at present.

Mr. Hutchinson pointed to a cast of a chest measuring 457 cubic inches, while 202 cubic inches of air only could be exhaled; or not one half of the space allotted for the organs. This man was corpulent, and only 5 feet 8 inches in height; therefore his mobility was mechanically impeded. Why this mobility increased with height, he felt as much at a loss to account for as he did the first day he commenced the investigation. But he was confident it was so, as upwards of 2000 cases went to prove it.

Mr. Hutchinson then pointed to a curiously interesting table, where all the heights, increasing in the arithmetical rotation of inch by inch, between five and six feet, were drawn by scale, and upon these the relative depth and breadth of the chest, so that the whole proportion of the frame was exhibited. The thoracic cavity was seen not to increase in any visible relation with the increasing height; the taller men here exhibiting smaller chests, in all dimensions than the shorter. Moreover, it was remarkable to observe how shallow the chest was, the average depth, from the apex of the lungs to the diaphragm, being only from seven and a half to eight and a half inches; and that the shortest men, (five feet four), who could blow least, had the deepest chests of all the other heights. The absolute length of the back also appeared to have nothing to do with the question, for he had taken the sitting height and the standing height, which averaged three feet, whatever was the standing height; and that men whose standing height was many inches shorter than others, who sit taller, yet blow less out of the lungs. Here Mr. Hutchinson said he must quit this part of the subject, "for years have I studied to determine this question, but in vain."

Mr. Hutchinson was asked upon what grounds he imagined that the chest in deep expiration did not enlarge by the diaphragm descending; this being the present and general opinion of physiologists. He replied, that he had invariably found, in health, that when a man stood and made a deep inspiration, the movements were as described by the diagram already referred to—viz. that the chest, in this violent effort, enlarged its dimensions almost entirely by the ribs; the sternum advanced, the ribs and shoulders were elevated; the abdomen receded, compressing the abdominal viscera; the lateral enlargement of the chest was very small, chiefly increasing in the antero-posterior diameter. Now, he considered himself at a loss to conceive how the diaphragm could descend and the abdominal muscles recede; the point of the recti muscles, in deep inspiration, would be found as posterior to the point of these muscles in ordinary breathing; therefore the diaphragm must be pushed up, and it was perfectly possible to conceive the diaphragm to enlarge its circumference without descending; for the convolution of this muscle was such that its area was nearly quadruple that of the sectional area of the chest. The ordinary breathing was entirely abdominal or diaphragmatic in men, but the contrary in deep breathing. The chest appeared to have two ways of enlarging,—one by its diaphragm, and the other by its ribs; but these did not act in concert, either by one or the other separately. This observation must not be made in the recumbent position, for then the back of the body becomes fixed, and thus medical men might be led into an error in examining the breathing movement of a patient in bed, when the very position altered their motions. From a knowledge of this, he was inclined to believe that this fixing of the back in the recumbent position caused patients labouring under dyspnœa to prefer the erect position for breathing.

The breathing in women differed from men only in one respect: their ordinary breathing being chiefly costal, and not abdominal. Whether this was to allow for gestation or not, he could not say; he thought there was some doubt of its being caused by the peculiarities of their costume.

Mr. Hutchinson was then asked by Mr. Ayston whether there was any relation between the respiratory power and the respiratory quantity in vital capacity? To which he replied, there was a certain indirect relation. It was seen that the vital capacity increased with mere height; but by another instrument exhibited before the society, that the inspiratory power was greatest at the height of five feet eight inches, and decreases in regular progression as the height increases; and that the men of five feet eight inches could elevate by the true inspiratory muscles a column of three inches of mercury, equal, in some cases, depending upon the size of the chest, to many hundreds of pounds' resistance to their muscles, whereas the six-feet men could only do two inches and a half, and that the expiratory power was one-third higher, but not from the muscular power, but the elastic power, of the ribs being here introduced, which is not so in the inspiratory act. This inspiratory power, he considered, indicated the *vis vitæ* of the individual more than the expiratory power, which was affected by vocation. An elaborate series of calculations were contained in the paper upon the elastic power, and the muscular contractile power alternating in every inspiration and expiration. But this question cannot, in justice to the author, be abridged; therefore the paper must be consulted, as this is a question for the closet. This elastic power has hitherto been very slightly treated by physiologists, and the circumstances under which Mr. Hutchinson determined his views are so rare and conclusive, and we may say impossible of being obtained again, that they demand the full inspection and consideration of the physiologist. But this much may be added, that Mr. Hutchinson considers the inspiratory act as demanding a muscular power to resist an elastic power of many hundreds of pounds; that is, a direct resistance to vital energy, with no counterbalance power.

Mr. Hutchinson was asked whether he had examined any men of remarkably small stature, whose height, as they sit, is not so remarkable as their standing height.

He replied, that he had, in the course of his observations, sought out the giant and the dwarf. He then handed a spirited sketch of a human being, whose height was under thirty inches—Don Francisco, aged forty-two. This little gentleman had a vital capacity of fifty-six cubic inches. He then exhibited the shade of the hand of Mr. Randall, seven feet high, the span of whose hand was nearly thirteen inches, and the length of his foot thirteen inches and a half. He had a vital capacity of 464 cubic inches, at 60°, which, if calculated at 98°, the temperature of the body, must bring it nearly to 500 cubic inches!

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13. *Influence of the Quality of the Milk of the Nurse on the Health of the Child.*—In our number for January last, p. 215, we gave an account of some interesting researches by M. Donné on this subject. The following cases related by M. Girard in the *Journal de Pharmacie*, (Oct. 1845,) are confirmatory of the conclusions of M. D.

A young lady fifteen days after her delivery, found it necessary to procure a nurse for her child, and she succeeded in getting one whose milk was only fifteen days older than her own, and which presented all the physical characters of good milk. The nurse was besides young and in apparently good health. After a few days the child began to sleep ill; it was attacked with a troublesome diarrhœa, and sensibly fell off; shortly after this it rejected all its food, and the mouth got foul with aphthæ. As the ordinary medical treatment failed to relieve the child, the nurse's milk was examined, and was found to present the following characters:—The milk was neuter, of an ordinary consistence, and became slightly viscous by ammonia. The globules were very voluminous, and instead of appearing under the microscope of a brilliant pearly lustre, were of a dull white opal colour. The whole field of the microscope was scattered with rounded particles, of which the form was comparable to that of a flattened raspberry, and presented the characters usually assigned to the corpuscles of colostrum. A new nurse was therefore, instantly procured, whose milk presented the microscopic properties of healthy milk. Within forty hours after the child had sucked this nurse the vomiting and diarrhœa had ceased, the aphthæ were greatly diminished, and a few days sufficed to restore the child to strength.

In another case where the mother was the nurse, the child, two months old, suffered from constant vomiting, was falling off, and had occasional comatose attacks. The milk of the mother, when examined by the microscope, was found to contain a considerable quantity of mucus. After a while the child vomited less, and the milk being anew examined, was found to contain fewer mucous globules. Soon, however, the vomitings and other disagreeable symptoms became worse, and to save the child it was absolutely necessary to change the nurse. Eight nurses were examined, but the milk of seven was rejected on account of containing globules of mucus, or granular bodies, or from having undergone some other change. The eighth nurse having apparently healthy milk, was chosen, and within two days the vomiting and other symptoms had disappeared, and did not again return.

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14. *New researches on the Œdema of New-born Infants.* By M. Henry Roger.—In an interesting paper on scleroma or the œdematous hardening of the cellular tissue of new-born children, M. Roger points out the important fact, that in proportion to the extent and severity of that disease, is the lowering of the temperature of the child. This lowering of the temperature is not confined to the

affected parts, but pervades the whole system, and seems to be essentially connected with the pathological states which cause the disease. M. Roger gives a table of the temperatures of 29 cases of this disease, in all of which it was observed that the more severe the affection the lower was the temperature. Thus in the cases in which the œdema was slight the temperature was normal, *i. e.* 98° Fahrenheit, or one or two degrees below it; but in the severe cases, even at the outset of the disease, the temperature was found so low as 75°. This was the lowest temperature noticed in any of the fatal cases; and it is remarkable that it is the same as that which was found to prove fatal to animals which were starved in the experiments of Chossat on inanition.

In commenting on the other pathological appearances met with in the bodies of these infants, M. Roger directs especial attention to those of the lungs which are in their nature identical with those observed following the pneumonia of infants. He, therefore, considers that authors are much mistaken in calling that disease inflammatory, or those changes products of inflammatory action which are only observed in infants whose temperature is lower than natural, and whose whole functions indicate torpor and congestion, but not inflammation.—*Ed. Med. and Surg. Journ.*, July, 1846, from *Archives Gén.*, May, 1845.

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15. *Ulceration of the Gums in Children occurring in an Epidemic form.*—Dr. JAMES DUNCAN describes, in the *Dublin Journal of Med. Sci.*, (Sept. 1845,) a severe and fatal ulceration of the gums and mouth of young children, attended with high fever, and apparently of an epidemic origin. Diarrhœa was the first symptom of illness observed, but there was no unusual pain of the bowels. The evacuations were unhealthy, watery, but not generally deficient in bile. In some cases, however, they were whitish, and very offensive. Blood was discharged in almost every case, either in a fluid state or mixed with jelly-like mucus. After these symptoms had continued a week or ten days the soreness of the mouth attracted attention. The gums were then found ulcerated, the fangs of the teeth exposed, and covered with a yellowish-white sordes. As the disease advanced the gums lost their pale flesh colour, and became red, swollen, and spongy, and bled both spontaneously and on being touched. The breath gradually became offensive, and the secretion of saliva became excessive. Partly from the fever, partly from the diseased state of the gums, the children could not take food, but their thirst was often excessive. The fatal termination seemed rather due to the violence of the attending fever, or the severity of the diarrhœa, than to the diseased state of the mouth. Though the diseased condition of the mouth closely resembled that produced from the administration of mercury, this drug excited rather a beneficial influence when exhibited, and tended to modify the disease.

In commenting on the nature of the affection, Dr. Duncan endeavours to show that the impaired state of the constitution is its true cause, and that in many points it presents an analogy to *purpura hemorrhagica.* One very interesting case is related of one of the members of a family being attacked with ulceration of the gums, while another was attacked with measles and purpura.

It was found that local applications, as borax and honey, muriatic acid, and sulphate of copper, had no appreciable influence on the disease; nor did the ordinary astringents, as chalk mixture, catechu, acetate of lead, or even opium itself, succeed in checking the diarrhœa. The best internal medicine was an acidulated decoction of bark, or an infusion of columba with nitric acid. These medicines controlled in a remarkable degree the diarrhœa, which resisted other remedies. The most valuable remedial agent, however, was counter-irritation produced on the abdominal surface. This was most easily effected by a mustard cataplasm kept on for an hour, by which time it produced free vesication, which was never followed by the unpleasant effects often observed after a cantharides blister. Wine was required in every case.

In another paper in the same journal by Dr. F. Battersby "on some unusual complications and sequelæ of measles," the same diarrhœa and peculiar ulcerated state of the mouth were very commonly remarked. In many of his cases, however, this state was accompanied by asthenic inflammation of the pharynx, larynx, and bronchii, which often proved fatal after obstinately continuing for one or more months.

16. *On the Internal and External employment of Nitrate of Silver.*—By Dr. Heller. The different views which have been entertained by writers in regard to the remedial action of nitrate of silver, especially when used internally, have induced Heller to make some investigations on the subject.

Although the nitrate of silver is generally well known and highly esteemed as an external application, yet respecting its efficiency as an internal remedy various opinions are entertained.

Experience has proved the good effects resulting from the local employment of this substance in affections of mucous membranes, of the eye, of the organs of generation, and from its use as an escharotic in various diseases; and the explanation of all this is very easy when we examine more closely into the effects produced by the nitrate of silver in such cases. For example, this salt of silver has the property of coagulating albumen, and with it cellular substance generally, and of precipitating extractive matters: it, in fact, destroys the vitality of these substances, and renders them useless to the system: wherefore they are separated and removed from it as so much waste and dead matter. This salt also decomposes the chloride of sodium, which all secreted fluids contain, as also the phosphates: an insoluble chloride of silver and an insoluble phosphate of the oxide of silver being thrown down. Chloride of sodium and phosphates are contained in all secreted fluids, such as mucus, pus, tears, synovia, lymph, &c.: the fluid also within cells, and that in which the cells themselves float, contain albumen, chloride of sodium, phosphates, and extractive matter. All these various substances are precipitated at once by a solution of nitrate of silver. The cells become completely destroyed and rendered useless to the system, wherefore they are separated from it and cast off. The frequent repetition of this destructive process to the epithelium-cells of a mucous surface by the repeated application of nitrate of silver induces a more rapid and abundant reproduction of these cells, together with an equally rapid and abundant separation of them, and by this means tends to keep in the background the disease which is seated in this membrane. In the fluid which is thus abundantly poured off from a mucous membrane, after the application of nitrate of silver to it, may be found epithelium, chloride of silver, phosphate of the oxide of silver, together with precipitated albumen and extractive matter: we can, therefore, with certainty affirm, that the nitrate of silver does produce some effect by its local application.

When used as an internal remedy, however, nitrate of silver behaves in a totally different manner. Heller performed several experiments with the view of determining to what amount the silver, when employed internally, is taken into the secretions and excretions. He carefully examined the blood, urine and feces of patients who for several months had been taking nitrate of silver in large quantities. He also tried what effect was produced by the direct addition of nitrate of silver to gastric fluid. The results of these experiments are as follows:—

In several cases of epilepsy nitrate of silver was administered internally in doses varying from three to ten grains daily; thus one girl took ten grains daily, and a lad, aged 13, twelve grains daily for three months. In this latter case, therefore, about two ounces and a quarter were administered altogether, yet without the disease being in the slightest degree mitigated, or any other effect on the system being produced. In none of the cases did the skin become in the least discoloured. The blood was several times examined in many of the cases; it presented the character commonly found in the blood of epileptics, especially an increase in the quantity of albumen; but in none of the examinations was there a trace of silver found.

The urine, also, contained not the slightest trace of silver; it was clear and without sediment, possessed its ordinary quantity of chloride of sodium, and contained no ammonia. Since the urine, therefore, contained chloride of sodium, no silver could have been present in it, else would the chloride of silver have been precipitated, and detected as such, which it was not; and since the urine contained no ammonia, which is a solvent of chloride of silver, so also could none of the chloride of silver have been retained in solution; moreover, after combustion and careful examination of the ash, not a trace of silver could be detected. The feces, Heller says, contain, in the form of chloride, the whole of the silver which has been administered. To prove this, nothing more is necessary than that the feces should first be reduced to ashes in a platinum crucible, and then the mineral salts which remain dissolved by a little dilute nitric acid; after this the chloride of silver is left behind, and may be weighed and estimated; it is completely soluble in ammonia.

Heller found that when he mixed nitrate of silver with the gastric fluid, chloride of silver was at once precipitated, for the gastric fluid contains a large quantity of the chlorides of sodium, potassium, and calcium; when ten grains of the nitrate was added to an ounce of the gastric fluid, the whole was precipitated in the form of chloride. From this fact Heller concludes, that so soon as nitrate of silver is taken into the stomach it is precipitated as chloride, which being an insoluble substance passes through the entire length of the intestinal canal, and appears as such in the feces; the results of examination of the blood and urine also show that none of the silver enters into the blood. This renders easily intelligible the circumstance that such large doses of nitrate of silver may be taken without any observable effect on the system resulting, yet according to Heller, leaves unexplained the statements of some writers, who describe the skin of patients who have employed the nitrate of silver for some time, as becoming brown or even black; he seems inclined to doubt the truth of these statements, inasmuch as they are opposed to the results of his experiments, and to the fact of this decoloration never occurring in any of the cases which he noticed.—*Lond. Med. Gaz.*, July 24, from *Heller's Archiv. für Phys.*, vol. i.

17. *Means of Preventing Bed Sores* (*Dublin Med. Press*, July 22d, 1846).—Dr. T. Purefoy has employed partially inflated bladders with success as a support to parts long and unduly subjected to pressure. The bladder is to be previously moistened in tepid water, afterwards oiled and subsequently partially inflated. He has found this means to promote the comfort of the patient and to obviate sloughing of the integuments.

18. *On the Diagnosis of Bright's Disease and its Relations to Albuminous Urine.* By G. Owen Rees, M.D.—In this interesting paper the author first directs his attention to those symptoms which lead to the detection of the morbus Brightii, when the more common effects produced by the disease are either not prominently marked, or altogether absent; and secondly, to notice certain albuminous conditions of urine, which must be distinguished from that form more especially connected with a deranged condition of the kidney.

In relation to the first part of my subject, I may perhaps be excused in remarking upon an error which has materially interfered with the progress of medical truths in all ages, and which still flourishes unfortunately as an effect either of imperfect education or natural obliquity of understanding, to the great detriment of our art. I allude to the notion that we can arrive at a satisfactory conclusion on any part of a subject by reflecting upon what we may have observed previously, and at a period when our attention was not especially directed to such point of inquiry. It is true that we can in some cases at once and safely contradict assertions involving sweeping generalizations, referring to well-known and frequent symptoms; but these are rarely the instances we are called to decide upon, and we must be extremely careful how we pride ourselves on powers of judgment derived from retrospective thought, when considering the truth of observations relating to diseases of organs like the kidneys, and which refer to derangements in the healthy character of a secretion, which, like the urine, is even now very imperfectly examined by practitioners.

Notwithstanding the obvious truth of this, the discovery of Dr. Bright is occasionally repudiated, on the ground that the long experience of an individual has not presented him with cases bearing the stamp of the disease in question: nor is it easy to persuade a particular class of persons of the great differences obtained as the results of observation, according as the mind may be prepared, or, on the other hand, unacquainted with the history of the subject for investigation.

The attention of Dr. Bright was first directed to the subject of his discovery in relation to the presence of anasarca, and few practitioners are now likely to overlook the condition of the urine, as to the presence or absence of albumen, when this symptom is present in any marked degree. The kidney, however, is sometimes diseased, being either in a congested or granular condition without the occurrence of anasarca. Albuminous urine may then be passed, and other certain characteristic symptoms of the morbus Brightii be present, which may, or may not, afterwards become associated with dropsy.

It is important that these symptoms, which, independent of anasarca, point to a diseased condition of the kidney, should be familiar to the practitioner, in order that the disease may be early detected, and subjected to appropriate methods of treatment.

Now it not unfrequently happens that patients present themselves for relief at the hospital, in whom the leucophlegmatic or anæmic aspect is strongly marked. They complain, perhaps of having taken cold, and feel pain and dizziness in the head, with shooting pains in the loins and down the limbs. To these general symptoms, so often met with in ordinary colds or in influenza, we do not find superadded the excitement of pulse or heat of skin noticed in such affections; on the contrary, the skin is often cool, though dry, and this circumstance, if it be present in connection with *nausea* or *vomiting* as a prominent symptom, should be sufficient to direct attention to the kidney, and may probably lead us to elicit, on further inquiry, a list of symptoms more or less confirmatory of the suspicion that the organ is in a deranged condition.

The additional evidence we meet with, should the case be as we may have suspected, consists principally in the presence of the following symptoms: puffiness of the eyelids, either sufficiently persistent to be observed at the period of examination, or which may have been noticed by the patient during the first hour or two after rising from bed, but which disappears as the day advances, as an effect of gravitation resulting from the maintenance of the erect or semi-erect position. The urine will often be described as clear, but passed at short intervals, and the patient will remember having been frequently obliged *to rise from bed to micturate.*

This latter set of symptoms (to a knowledge of which we may have attained by acting on an early suspicion principally derived from the state of the stomach complained of by the patient), should at once lead us to examine the urine, and we shall generally find, in such cases, that albumen may be detected in considerable quantity, and the progress of the case afterwards prove that the morbus Brightii is present, possibly in an aggravated form.

I have here described what may be considered as an intermediate case; at least so far as the difficulty of diagnosis is concerned. We often meet with patients who do not answer fully to the description I have given above; while, on the other hand, the less palpable symptoms which I have described as leading to our suspicions, may, on further questioning, lead to our discovering all the confirmatory indications of the morbus Brightii. Thus the endocardium may be seriously involved, such lesion being obvious enough on auscultation, notwithstanding that it may not yet have proceeded so far as to produce urgent symptoms.

Again inquiry may afford us the history of a long and painful salivation, for which no very laudatory mention is made of the skill and humanity of a former attendant, or patients may even present themselves to us while under mercurial influence, and our inquiries lead to no very sufficient reason for so powerful and sudden an effect having been produced by the drug.

The excessive action of small doses of mercury thus often becomes a valuable guide for the detection of albuminuria, though a painful and injurious result for the patient, and one which no practitioner familiar with the disease would willingly bring about.

There is a severe form of cerebral disease which occurs in connection with the excretion of albumen with the urine, showing some peculiarities of a very marked character, and to which the attention of practitioners was especially called by Dr. Addison, in a paper published in the *Guy's Hospital Reports*, for April, 1839.

This form of brain affection is characterized epecially by the anæmic aspect of the patient, by a quiet pulse, and frequently only partial coma. If there be any stertor, it is of a peculiar kind, and characterized by a low hissing sound.

These seizures are frequently attended with convulsive attacks occurring at intervals. Paralysis is not necessarily present, but still may occasionally exist, and anasarca is generally wanting.

This kind of case has been much overlooked; at least, as connected with disease of the kidney; and I will therefore describe the history of a man lately admitted into Guy's Hospital, under the care of Dr. Babington, as affording an instance of a form of kidney disease which might not have been detected by a less accomplished practitioner.

John O'Connel, admitted into Lazarus ward on the 6th of May, 1846. He is in a semi-comatose state. When roused he answers questions with difficulty, and unsatisfactorily. He lies on his back, and vomits frequently. As far as can be ascertained from his answers, the epigastrium and head are the seats of pain. Motion and sensation of the left side of the body impaired; the paralyzed side is the colder to the touch; tongue loaded with thick dark-brown fur; eyes starting and vacant. No remarkable dilatation or contraction of either pupil; the right somewhat the more dilated; pulse 76 per minute; respiration appears normal; chest healthily resonant, except perhaps over the pericardial region; heart's impulse rather excessive, somewhat irregular; liver enlarged: bowels constipated; body emaciated; no anasarca. (This condition, notwithstandiug the absence of anasarca, at once led to a suspicion that the kidneys were in a diseased state, and further examination showed this to be the case.) Urine scanty, high-coloured, acid, strongly coagulated by heat, and also by nitric acid; specific gravity 1010.

After some days' treatment this man recovered sufficiently to give an account of himself, and related a history such as is constantly received from persons affected with the morbus Brightii.

These further particulars were as follows:—

He is 34 years of age, married, no children; a weaver by trade: had lived very intemperately till twelve or fifteen months ago: used to drink both beer and spirits: until this attack commenced he had always had good health. Is of a healthy family. Six months ago caught cold by sitting at work eight hours in damp clothes: had then severe cough for two months, and swellings of the legs, headache and vomiting, from which symptoms he has suffered more or less until the present time.

Cases such as the above are not of very unfrequent occurrence, and though the symptoms are severe, they are such as to direct attention so exclusively to the brain that the condition of the kidney but too often escapes detection.

I will now proceed to the second part of my subject, and describe various forms of urine containing albumen, and especially notice that which is characteristic of the morbus Brightii, as it too frequently happens that errors occur in the diagnosis and treatment of renal cases from a want of familiarity with the appearance and reactions of the urine.

In my description here, I shall assume that the presence of albumen in the urine has in every case been satisfactorily established, and shall not enter upon a consideration of the various sources of fallacy connected with each test used by the practitioner, but assume him capable of the task of accurately examining the urine in relation to this important point.

Urine may be excreted in the albuminous condition, owing to the presence of pus, blood, serum of blood, and (to a small extent) the presence of semen in the fluid.

The presence of pus, which is best proved microscopically, may be owing to an excretion either from the bladder, ureters, or kidneys, and therefore that urine which is rendered albuminous by its presence is in no way necessarily characteristic of kidney disease. It is not uncommon to find urine highly albuminous in cases of diseased bladder during the period that pus is pouring from the mucous membrane, and to observe its gradual disappearance in proportion as the deposit of pus decreases, and ultimately to find the urine free from albumen. This occurs, of course, only when the bladder alone is affected; for if the kidney be the subject of congestive or granular disease, we shall observe the urine persistently albuminous even after the deposit of pus has ceased to appear: and it is by attention to this point that we are often able to determine that kidney disease exists in addition to the more obvious and more aggravated disease of the bladder. I do not here allude to sources of fallacy connected with the presence of pus in the chamber-vessel, which is derived from the uterine or vaginal discharges of females: it is well to mention, however, that such sources of fallacy may interfere with our discovering the truth, unless proper precautions are had recourse to; the best possible among which is to use the catheter in order to obtain our specimen for examination.

Urine often contains albumen, owing to the presence of blood. It is then either of a bright red or dark porter colour. Both these kinds of bloody urine are occasionally observed in the morbus Brightii, and chiefly in its early stages; but they are not especially or necessarily characteristic of it, which may be pretty certainly said of true serous urine.

Serous urine is not to be confounded with that which contains blood; it is free from hæmatosine, at least so far as the unassisted eye can determine; and under the microscope the true blood-corpuscles are seen only in very small number. The albumen it contains is derived from the serum of the blood, which passes from the kidney to the almost total exclusion of the blood-corpuscles and fibrin.

To come to a determined opinion on the existence of the morbus Brightii, it is necessary that serous urine should be passed for a length of time, and that this should be the great leading feature of the disease, and that if any other form o urine be passed containing albumen, owing to blood or pus, that such circumstances should not be regarded as necessary to the complete history of the case and moreover to be looked upon as a condition which must be eliminated as a source of fallacy, so far as concerns the production of albumen in the urine, before we can feel ourselves justified in concluding that the kidney is prone to the granular degeneration.

When serous urine has been passed for any length of time, say for weeks o months, and both time and treatment fail to remove its quality of coagulability we may conclude on the presence of kidney disease.

The probability of a cure being effected in any such case, or, on the other hand the inevitable fatal termination of the disease, is a subject on which considerabl difference of opinion will exist; a discrepancy principally owing to the fact, th we are not yet able to decide upon the exact stage of the disease—to ascertai in fact, whether or not the congestive condition has yet given place to the depos of adventitious matter in the substance of the organ. No one would be incline to deny that the kidneys, which in health are engaged in excreting from the bloo a large quantity of effete material, could have their action interfered with for an great length of time by organic lesion, without the destruction of the patient resul ing as a consequence; and it is as clearly proved from clinical and pathologic observation that the congestive stage of the morbus Brightii, accompanied b serous urine, may exist for some time without being followed by the mottled ki ney, and the patient be restored to health under appropriate treatment.—*Lon Med. Gaz.*, July, 1846.

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19. *On the Treatment of Bright's Disease of the Kidney.*—The *Northern Journal Medicine* contains an elaborate essay on Bright's disease of the kidney, by D Alexander Wood, from which we extract the following interesting remarks rel tive to the therapeutics of that affection.

1. *Therapeutics of Acute Variety.* The indications for treatment in this varie of the disease are—

1st. Remove the congestion of the kidneys.
2d. Restore the function of the skin.
3d. Remove the dropsical effusion.

Almost all the authors who have written on this disease are agreed as to t propriety of *blood-letting*, and assign it the highest place as a therapeutic age The quantity of blood to be drawn must be decided by a consideration of t strength of the patient, the intensity and period of the disease, and the appearan of the blood drawn.

"In addition to the usual means of judging upon these points," observes D Christison, "the practitioner will find great advantage in taking also into a count the composition of the blood. On every occasion where blood-letting resorted to by him for the first time, it is advisable to examine the state of t blood, more especially with a view to discover the proportion of its colouri matter or hæmatosin, and so to determine the exact progress of the structural rangement of the kidneys. For, if it should thence appear that the disease is in its early, but in its advanced stage, and that the acute symptoms are con quently not primary, but superinduced, depletory measures must be applied with much greater caution and reserve."—(pp. 133, 134.)

It is generally recommended to follow up the venesection by *local depletion*, either by cupping or leeches. I have seldom found it necessary, at least in the variety occurring secondarily to scarlatina, the one most commonly met with, to have recourse to this, venesection alone accomplishing all that is necessary.

Should the patient, however, complain much of pain in the region of the kidneys, there can be no doubt of the propriety of having recourse to cupping or leeches, more especially if percussion can detect engorgement of one or both kidneys.

These vigorous means, besides fulfilling the first indication, will in a great measure have prepared the way for successfully accomplishing the second, the antiphlogistic treatment proving in this, as in most inflammatory affections, the best preparative at least for the diaphoretic.

The temperature of the patient's apartment should be elevated and kept at an equable standard, and the action of diaphoretic medicines, aided by the occasional employment of the *warm or vapour bath.*

The use of Dover's powder, as a diaphoretic, is highly extolled by Professor Christison, and its operation may be aided by the occasional employment of the warm or vapour bath.

Tartar emetic is much recommended by Dr. Barlow.

After stating that the recovery of patients treated by purgatives, diuretics, occasional bleedings, and diaphoretics, is for the most part tedious, and sometimes incomplete, and that depletion is in general not well borne, he continues:—"I was accordingly induced to seek for some other remedy, and regarding the affection to be essentially of an inflammatory character, as evinced by the increased frequency of the pulse, and the state of the blood when drawn; and considering, moreover, the probably injurious effects of medicines, which act as direct stimulants to the kidneys, in the recent stages of this form of disease, and the importance, consequently, of promoting, if possible, the secretion from the skin, I was led to make trial of tartarized antimony, which I found fully to answer my expectations."—(*Guy's Hosp. Rep.*, vol. v. p. 168.) And again,—"It (tartar emetic) is a remedy suggested by the nature of the affection, and calculated to fulfil the most obvious and important indications, namely, equalizing the circulation, subduing the inflammatory action, and restoring the functions of the skin."—(*Ibid.*, p. 178.)

I confess that the trials I have been enabled to make of this medicine, have seldom fulfilled the expectations which such statements encourage, and that I have more than once seen all the symptoms advance with alarming rapidity under the active employment of tartar emetic.

For the purpose of removing the dropsical effusion, two classes of remedies recommend themselves—diuretics and purgatives.

With regard to the employment of the first, considerable difference of opinion prevails. Diuretics, in order to act, cause determination of blood to the kidneys in this disease. These glands are already in a state of congestion, and therefore, by such remedies, that congestion must be increased.

Plausible as such reasoning may appear, I question if, in actual practice, the use of diuretics is ever really injurious; it has certainly been condemned both by Dr. Bright and Dr. Osborne: but, on the other side, we have the testimony of Dr. Christison, who "has very seldom witnessed decided diminution of the dropsy, unless where diuresis or purging was either artificially induced at the time, or arose spontaneously," and has "even repeatedly seen the albumen disappear under diuretics."

I have found great benefit from the use of nitre in this disease, which has certainly a remarkable effect in removing the uneasiness of the loins, so often complained of; its diuretic effect may be amply secured by combination with digitalis and cream of tartar. To secure the full benefit of this remedy, however, it must be given in very large doses, which, if the salt be largely diluted, may very safely be done.*

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* In the Posological Table of Duncan's Dispensatory, the dose of this salt is set down as from gr. x to ʒss. In Dr. Christison's as gr. x to ℈j as a sedative refriger-

In some cases I have observed very copious perspirations to accompany its employment, and it is singular that in these it seemed the least beneficial. Given in these large doses, it has a marked effect in lowering the pulse, without at the same time affecting the tone of the system so much as tartar emetic. Where it induces vomiting or purging, the addition of a few drops of laudanum to each dose will check these troublesome symptoms. It seems speedily to enter the urine, and very soon after it has been swallowed, it may be detected in that secretion.

There can be no doubt as to the advantage of free purgation in the acute form of the disease, and we should naturally select those purgatives which produce serous evacuations. Gamboge, elaterium, and the compound powder of jalap, are all-powerful remedies of this kind.

The patient must of course be carefully preserved from cold and damp, and protected from all exposure during convalescence.

The following treatment is confidently recommended by Dr. Golding Bird:—

"I may remark, that as a prophylactic remedy, the warm bath is invaluable; I scarcely recollect, even in a large experience, a case of dropsy after scarlet fever, occurring when the warm bath was daily used, as soon as the skin began to exfoliate, and continued until a perspiring healthy surface was obtained. When anasarca has occurred, strict confinement to bed, or at least to a warm room, must be enjoined, the warm bath used twice a week, and a free action on the skin encouraged. The bowels should be kept acting by the pulvis jalapæ compositus, and the antimonii potassio-tartras administered in doses varying from one-twelfth to one-eighth of a grain, four or five times in the 24 hours, according to the age and strength of the patient. A bland and nearly fluid, but moderately nutritious die should be enjoined.

"The plan must be continued until all anasarca has vanished, a supple an perspiring surface obtained, and urine free from albumen.

"The remedies may then be gradually left off, and more nutritious diet allowed and the ammonio-citrate of iron administered thrice daily, in doses of three to fiv grains, to remove the anemiated state of the patient.

"On leaving the bed-room, a flannel waistcoat extending to the loins should b worn for some time. This treatment has been almost invariably successful i every case I have employed it; and I may remark, that I have never in thes cases witnessed the extensive prostration said by some to be the almost necessar result of the employment of antimony in the diseases of children."—(*Urinar Deposits*, &c., p. 235.)

2. *Treatment of the Chronic Form.*—However simple in its indications and usuall satisfactory in its results the treatment of the acute form may be, it is far othe wise with the chronic. In it, one chief aim must be to ward off as long as po sible those complications from which the suffering and danger of the patient chiefl arise.

Should there be any evidence of febrile movement in the system, depleti may be practised as in the acute form, or if active congestion of the kidney should exist or supervene, leeches or cupping may be applied to the loins.

The functions of the skin should be particularly attended to; it should be pr served in a perspirable condition by warm clothing, and the occasional use diaphoretics, and the warm or vapour bath.

We do not seem to possess any remedies which have the power of alterin the morbid state of the kidneys. Mercurials, from their power of subduing i flammation, and removing glandular obstructions, might appear worthy of tri but experience has decided as to their inutility; and in this disease not only salivation easily excited, but is also liable to become violent and unmanageable.

Dr. Bright has occasionally seen the character of the urine change, and t dropsical effusion disappear under the use of tincture of cantharides, given

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ant, and ℈ii to ʒj as a diuretic. It may, however, be safely given in much larg doses. Dr. Broklesby gave ʒii dissolved in a quart of gruel, three, four, or five tim a-day, in acute rheumatism; and in the same disease, Martin-Solon has given fr ℥ss to ʒxv in divided doses, in the 24 hours.—(Bull. de Thérap., 1843.)

doses of from four to twelve drops, in some emulsion. Dr. Wells, in his paper already referred to, narrates five cases of dropsy with coagulable urine, treated with this remedy, in doses of from thirty to sixty drops in the twenty-four hours. In three of these the improvement was very decided; in one the albumen disappeared from the urine; in the remaining two no benefit seemed to result from its use.

M. Monneret has since strongly recommended the same medicine. (*Gazette des Hopitaux*, Oct. 13, 1842.)

M. Gutbrod tried the ioduret of iron in two well-marked cases of the disease with success. (*Ibid.*, Sept. 7, 1843.)

M. Alken has found benefit result from the employment of hydriodate of potass, and iodine ointment. (*Oesterreich. Med. Wochens.*, Jan. 28, 1843.) M. Rayer has found no benefit to result from the external application of mercurial or iodine ointment.

Dr. Rees following out his idea of the pathology of the disease, of which a summary has already been given, recommends the plan of treatment usually resorted to in anæmic diseases, viz., chalybeate tonics, saline purgatives, and nutritious diet, and strongly condemns depletion. (*Med. Gazette*, Aug. 16, 1844, p. 654.)

Dr. Copland has given equal quantities of the tincture of cantharides, and the tincture of sesqui-chloride of iron with marked benefit in a few cases.

In the more advanced states of the disease, the same author has seen more advantage from the preparations of iron judiciously chosen and combined with other remedies, than from any other class of medicines.

3. *Treatment of the Complications.*—A. *Dropsy.*—We need scarcely recapitulate what has been already said of the means of removing this symptom. The diaphoretic plan, so strongly recommended by Dr. Osborne, is not much esteemed by Dr. Christison or Rayer, while the latter author agrees with Dr. Bright in thinking that the importance of diuretics has been overrated by the former.

Dr. Christison is disposed to place much reliance on the combined use of cream of tartar and digitalis.

From a drachm to a drachm and a half of the latter substance is given three times a-day, the patient taking at the same time a pill, containing one or two grains of the powder of digitalis, or 20 drops of the tincture may be given in a little cinnamon water. The diuretic effect of these medicines may be increased by the exhibition of a blue pill every night, until four or five have been taken. Occasionally diuresis may be established by the administration of an emetic of ipecacuanha and tartar emetic, and sometimes even by the action of a hydragogue cathartic.

Should these fail, we are recommended to have recourse to squills, infusion of broom tops, or spirit of nitric ether, or Hollands with water, or carbonate, nitrate, or acetate of potass.

Many of these are condemned by Dr. Copland, as liable to disorder the stomach, and thereby farther impair digestion and assimilation, and thus accelerate the unfavourable progress of the disease.

M. Rayer prefers the decoction of the wild horseradish to all other diuretics.

Dr. Christison draws an admirable distinction between the mistaken employment of diuretics as a supposed cure for the disease, and their judicious use as a means of combating this particular symptom. He is not inclined to attach any value to the theoretical arguments of those who have supposed that diuretics may act injuriously; he condems them in the early stage, because, during the state of general reaction, they do not generally excite their proper action, and the urine is restored to its healthy amount with much greater certainty by subduing the reaction; that is, by antiphlogistic treatment, and also because there is no special indication for their employment, unless when dropsy is present.

There can be no question as to the efficacy of purgatives in removing dropsical effusion; and perhaps they are the best means we possess for the purpose, if we bear in mind the tendency to annoying diarrhœa as a complication of this disease. Little more need be added to what has been already said under the treatment of the acute disease.

Rayer has often seen a remarkable diminution, and often a total disappearance of the effusion under the use of Seidlitz or Pullna water. He also recommends cream of tartar, in half ounce doses. Dr. Christison thinks favourably of gamboge, in doses of five, seven, or rarely nine grains, given once every two days. To prevent it griping, he recommends its minute division to be secured by trituration with the bitartrate of potash.

When all other remedies have failed, puncture of the limbs may be resorted to; but this operation, performed in the mildest way (acupuncture), is at all times dangerous, where the vital powers are enfeebled. Dr. Christison relates two cases where it proved fatal.

B. *Head Affection.*—This very dangerous complication requires energetic treatment; blood-letting occasionally, and very active purging invariably are demanded. Rayer recommends purgative doses of calomel, cupping over the mastoid processes, and blisters to the nape of the neck.

"Diuretics, too," says Dr. Christison, "have always appeared to me of undoubted service."

C. *Affections of the Chest.*—The inflammatory affections arising in the course of this disease require the same energetic treatment as when they occur idiopathically. Pleuritis, especially, is so exceedingly apt to end in sudden and copious effusion, that its earliest commencement must be watched and met with promptitude and vigour.

D. *Affections of the Digestive Organs.*—These are often the most annoying and tedious complications which we are called on to combat, and more may generally be effected by attention to diet and regimen than by medicine.

Acidity and flatulence are usually complained of, and are to be treated by a combination of alkalies and bitters. Dr. Sims' remedy for the heartburn of pregnancy is often successful. ℞.—Magnes. ust. ʒj; aq. ammon. pur. ʒj; aq. cinnamomi ʒiii; aq. puræ ℥vss. M. Of this two or three teaspoonfuls are to be taken when these symptoms are troublesome.

Where these symptoms are associated with constipation, the carbonate and sulphate of magnesia may be given in bitter infusion, with hydrocyanic acid. ℞.—Magnesiæ sulph. ℥ss; magnesiæ carbon. pond. ʒii; acidi prussici med. gtt. x; infusi gentian comp. ℥xi; tr. hyoscyami ℥i. M. Of this two tablespoonfuls may be taken three times a-day.

Or lime water and infusion of gentian may be prescribed in equal quantities and the bowels solicited by gentle doses of the compound rhubarb pill.

When the violence of these symptoms are subdued, an attempt should be made to restore the tone of the stomach by the preparations of iron, or zinc, with o without the vegetable tonics.

Where chronic vomiting is present, remedies of the same kind, with or withou opiates, will sometimes prove successful. ℞.—Sodæ carbonatis ʒii; tr. valerian ammon.; tr. cardamom. comp. āā ℥ss; acidi prussici med. gtt. viii; syrupi zingiberis ℥ss; aq. lauri cinnamomi ℥viss. M. Of this an ounce may be given when the sickness is felt.

Creasote is strongly recommended by Dr. Christison, who administers it twice thrice, or oftener, in the course of 24 hours, dissolved in an ounce of some aromatic water. The taste is, however, so repugnant to some, that I have preferred prescribing it in the form of a pill; one drop of creasote, two grains of rhubarb and one grain of extract of gentian, readily form a convenient pill.

Opium is also sometimes of service, especially the sedative solution. One cas which had resisted all other treatment, yielded to the use of a pill containing ha a grain of nitrate of silver, and the same quantity of extract of opium.

The operation of all these remedies will be much aided by the application sinapisms, turpentine epithems, or a cantharides blister externally; in the latte case the blistered surface may be sprinkled with the muriate of morphia.

Diarrhœa may be checked by chalk, astringents, and opiates; in severe case the acetate of lead, with opium, may be given; and if all these fail, strychnine in combination with opium, will sometimes succeed.

The other complications are to be treated precisely as we would do in case where they occurred unassociated with kidney disease.

20. *On the Minute Structure and Chemical Composition of Tubercular Deposits.*—Dr. J. Hughes Bennett, in an interesting paper on this subject in the *Northern Journal of Medicine*, for April and May, 1846, observes, that with a view of establishing a correct pathology, our first efforts must be directed to determine what tubercle really is; how it can be accurately separated from the ordinary products of inflammation on the one hand, and from malignant or other morbid growths on the other. To arrive at these points we must inquire into the minute structure and chemical constitution of this substance.

Minute structure of tubercle.—If from the tubercular lung of an individual who has died of phthisis pulmonalis, we choose a small mass of tolerably firm consistence, make a thin section, and examine it with a power of 250 diameters linear, we observe the net-work of the lung crowded with a dense granular-looking matter. This is composed of corpuscles and granules. The corpuscles are of an irregular form, more or less angular, varying in their longest diameter from $\frac{1}{50}$ to $\frac{1}{100}$ of a millimetre, composed of a distinct cell wall, containing three or more granules, without any distinct nucleus. There are also numerous granules and molecules, varying in size from a point scarcely measurable, to the $\frac{1}{300}$ of a millimetre in diameter. Weak acetic acid renders the corpuscles more transparent, without producing any other change, and dissolves many of the granules. Ether and alcohol produce little change; ammonia partially dissolves the corpuscles. They are immediately and completely dissolved in a solution of potash.

Softened tubercle presents a similar structure, and is sometimes wholly composed of granules or molecules. Sometimes the corpuscles of tubercle are larger and rounder than those previously described, approaching in form to those observed in scrofulous pus. The gray semi-transparent tubercle is composed of similar elements, although more transparent, and not so much defined. In cretaceous tubercle there are masses of earthy salts of irregular form and size, frequently mingled with crystals of cholesterine.

"If then," says Dr. B., "we are asked to determine what is positively tubercle as distinguished from all other morbid products, we must answer, that deposition which is composed of the peculiar corpuscles and granules we have described and figured. From pus corpuscles they are readily distinguished by the action of acetic acid, which in them causes no granular nucleus to appear. From plastic corpusles they may be separated by their irregular form, smaller size, and the absence of primitive filaments. With the exudation or granular corpuscle they can scarcely ever be confounded, on account of its large size, brownish or blackish colour, and nucleated or granular structure. The cells of cancer are large, transparent, and distinctly nucleated, and consequently easily distinguished from the small, non-nucleated corpuscles of tubercle."

Tubercle is frequently conjoined with more or less pigmentary matter, which is greater in amount as the tubercle is older. It occurs in the form of irregular black masses, which consist of numerous minute molecules aggregated together.

After considerable experience in the examination of sputum, he thinks himself warranted in saying, that a knowledge of its minute structural composition is of little use in a clinical point of view. The diagnosis of phthisis, in its various stages, is capable of being so accurately determined by auscultation, that the microscope is in this respect of secondary importance.

Dr. Bennett has never seen the corpuscles of tubercle nucleated; he considers them to be undeveloped cells, which are produced slowly, and have no tendency to form perfect organizations, before they break down into a molecular matter. Hence no danger is to be apprehended from the spread of tubercle itself, and if fresh deposits could be prevented, the tendency of this substance to disintegration is highly favourable to its absorption.

The chemical composition of tubercle.—Dr. Bennett quotes at length the observations and analyses of Abercrombie, Hecht, Lassaigne, Preuss, Gueterboeck, Simon, Scherer, Félix Boudet, and Wright. He also inserts a note from Dr. Glover, of Newcastle, giving the results of various analyses of tubercle by him, in its different forms and stages. He concludes the paper with the following summary and observations:—

"In reviewing the different analyses of tubercle which have now been given, we find,—

"1. That tubercle consists of an animal matter, mixed with certain earthy salts.

"2. That the relative proportion of these varies in different specimens of tubercle. That animal matter is most abundant in recent and earthy salts in chronic tubercle.

"3. That the animal matter certainly contains a large amount of albumen. Some chemists have also detected caseine, the existence of which is probable; others gelatine, the presence of which is more doubtful. The statement of Gueterboeck, that it contains a peculiar animal matter, (phymatine,) has not been confirmed by other analysts. Fibrine and fat exist in small, but variable proportion, as a constituent of tubercle.

"4. The earthy salts are principally composed of the insoluble phosphate and carbonate of lime, with a small proportion of the soluble salts of soda. The statement of Boudet, that cretaceous concretions are principally formed of the latter, is directly opposed by other chemists, and is quite incompatible with their long persistence in the body.

"5. That very little difference in ultimate composition has yet been detected between recent tubercle and other so-called compounds of proteine.

"The two problems which the pathologist wishes the chemists to resolve are, 1. What difference exists between tubercle, lymph, and cancer? 2. Does the blood undergo any change which bears a relation to the production of these deposits? These questions are not yet answered; but there is every reason to hope now that attention is directed to these subjects, something positive will soon be ascertained. No doubt, there are great difficulties to be surmounted. Organi chemistry is yet in its infancy. Only lately, Reichenbach discovered sulphur i considerable quantity, as a constituent of animal bodies. Even now, the existenc of proteine, which promised to facilitate our knowledge of organic compounds, ha become a subject of dispute. At the last meeting of the Royal Society of this city (April 6, 1846,) Dr. G. Wilson showed that the fluoride of calcium, which ha hitherto been considered insoluble in water, was, on the contrary, soluble to considerable extent. He detected it in recent and fossil plants and animals, in th blood, and in milk. If, then, the very basis of organic analysis is thus uncertain if we are as yet ignorant of the chemical constitution of the animal solids an fluids in a state of health, we need not feel surprise at the little assistance patholog has hitherto received from the chemist. We anticipate, however, from the labou of those who follow the track of Simon, Scherer, and Lehmann, important resul at no distant date.

"To arrive at positive conclusions, it becomes a matter of the utmost importanc that the different morbid products should not be confounded with each othe This has been done even by Scherer. Thus, in his analysis of tubercle from th liver, the appearances under the microscope prove the disease to have been cancer, and not tubercle. Hence, it is incumbent on the chemist to give, with eac analysis, an account of the minute structure of the matter operated on. Unle this be done, we must anticipate confusion rather than harmony, from the multiplication of analyses of morbid products."—*Monthly Journ. Med. Sci.* for June.

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21. *Hemorrhage from the Ear following Suppressed Menstruation.*—M. ALIBE relates, in the *Journal de Mèd. et de Chirurg. de Toulouse*, a very interesting case, which there occurred a periodic hemorrhage from the ear after the suppression the menses.

The subject of this case was a woman 45 years of age, whose menses had stopp from the application of cold to the feet and agitation, nine years previously. T menses have not appeared since that time, but she became deaf, and every mon there flowed from the right ear an ounce and a half of blood. The dischar continued twenty-four or forty-eight hours, and ceased spontaneously. It was a nounced by certain premonitory symptoms, which custom had taught the wom indicated an approaching flow of blood, consisting of an inconvenient sense weight in the head, noises, and a sensation as if numerous ants were buzzing the ear affected. The patient herself observed the regular periodic nature of t discharge, and understood that it was supplied by nature to compensate for t absence of the menses.

At present, this loss of blood no longer retains its menstrual type. It com back at indeterminate intervals, and differs more or less from the quantity formerly discharged. This irregularity is accompanied by violent cephalalgia, fugitive vertigo, dimness of sight, and, in short, a congestive state of the brain. The general health is otherwise perfect.—*Lond. Month. Journ.* for June.

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22. *Excessive Secretion of the Ammonio-Magnesian Phosphate by the Kidneys with long-continued Vomiting.*—Dr. Golding Bird read before the Royal Med. and Chirurg. Society, March 24th last, a case of excessive secretion of the ammonio-magnesian phosphate by the kidneys in confirmation of the value of irritability of stomach as a diagnostic sign of calculous affection of the kidney. A lad, æt. 18, was admitted into Guy's Hospital, under Dr. Golding Bird's care, with all the symptoms of scirrhous pylorus, with the exception of non-existence of epigastric tumour. He had for four years been subject to constant irritability of stomach, and had never for 24 hours consecutively ceased from vomiting, never having retained a meal during the period alluded to, for more than an hour, often only for a few minutes. He was emaciated to a skeleton, and appeared actually sinking from exhaustion. There appeared (unless the vomiting were regarded as such) to be no demonstrable evidence of organic disease; the urine had a fetid fish-like odour, was copious, limpid, rarely whey-like, of moderate specific gravity, and deposited crystals of triple phosphates in abundance. No hippuric acid or other abnormal element. The urine was alkaline on secretion, and always contained a large excess of the crystals alluded to. Treatment directed specially to the gastric symptoms, having failed to relieve in able hands, Dr. G. Bird prescribed strychnine in doses of gr. $\frac{1}{16}$. The result was the gradual diminution of the gastric irritability, the restoration of the acidity of the urine, and the disappearance of the phosphatic crystal. After a few weeks' continuance of the medicine the lad became convalescent, and actually fat. The author entered then into the question of the etiology of the disease, and expressed an opinion of its connection with functional derangement of the spinal and ganglionic nerves. In conclusion, he pressed upon the notice of the meeting the value of strychnine as an anti-emetic remedy.

Mr. Lloyd was of opinion, with Dr. Bird, that the secretion of phosphatic urine, in cases of disease of the spinal marrow, was by no means uncommon; indeed, it was a sign for which he generally looked in those cases, but this state of urine was not, in his experience, at all associated with loss of flesh, or with stomach disease, as noticed by Dr. Bird. He had frequently met with these cases, and he mentioned one in particular which had existed for several years, the chief symptom being pain in the lower part of the spinal region; the disease was considered to be dependent on repeated attacks of lumbago. The urine, however, eventually became phosphatic, and the true nature of the case revealed. He was in the habit, in all such cases, of examining the urine by the aid of the microscope, and had always found phosphatic crystals present. He was not aware whether Dr. Bird, in his paper, had alluded to any other morbid products which were found in cases of this description; but he, Mr. Lloyd, had generally detected much mucus, or a great number of pus corpuscles, in phosphatic urine generally. He mentioned one case in which the urine was loaded with phosphates, and contained a great number of epithelial cells and other morbid products. He had never met with a similar example. In this case, also, the stomach did not sympathize with the morbid condition of the spine; the patient was still under treatment, but progressing towards a state of convalescence.

Dr. Golding Bird could not help thinking that two very distinct classes of cases had been confounded by Mr. Lloyd, both of which were characterized by the presence of phosphates in the urine, but the circumstances of each class of cases were widely different. One of these classes of cases, occurring frequently to the surgeon, consisted of those in which a diseased secretion was poured out from the mucous membrane of the bladder, as the result of chronic inflammation of that organ, stricture, enlargement of the prostate, or where, after mechanical injury to the spine, a more or less complete paraplegic condition had been induced. In these cases the alkaline and phosphatic state of the urine was produced from changes taking place in the fluid after it had reached the bladder. The urine in these cases was always ropy, and also frequently fetid. If, in these cases, however, the bladder were carefully washed out, and the urine secreted during the next few minutes were examined, it would be usually found to be acid. The second class of cases were altogether of a different nature from these, which, from their dependence on mechanical lesion, were strictly surgical. In the second class, from some antecedent cause, very likely having relation to the function of the spinal nerves, a low form of inflammation or irritation was set up in the kidneys, and the consequence was, a secretion of alkaline urine, which urine contained an excess of phosphates. Dr. Bird believed that the mechanical irritation of the tubular structure of the kidneys by the phosphatic crystals was the immediate exciting cause of the irritation of the stomach, or of the vomiting.

Dr. Taylor thought that the distinction to which Dr. Golding Bird had just referred was an important one—viz., that between urine which was secreted in an alkaline condition, and urine which had become alkaline only in consequence of chemical changes taking place in it after its secretion. This distinction had been first drawn, or, at least, had been especially insisted on, by Rayer, who considered that urine, which is secreted alkaline, is an important symptom of simple chronic nephritis. Dr. Taylor had had the opportunity of satisfying himself of the fact that the urine is in some cases alkaline when secreted, having made the experiment, referred to by Dr. Bird, of washing out the bladder with water, and collecting the urine in a very short time afterwards. In more than one of these cases he had also had the opportunity of ascertaining, after death, that the kidneys were inflamed, and there was no other appearance to account for the alkaline urine. Whether this class of cases, however, is attended with more disorder of the stomach than other cases in which the kidneys are diseased, he thought was another question. Nausea and vomiting are well known to be common symptoms of various morbid conditions of the kidneys. In the cases of alkaline urine, observed by Dr. Taylor, the sickness had not been more marked than in other renal affections. The same thing seems to be implied, if it be not directly stated, in the work of Rayer. The great reason why Rayer insists so much upon the importance of alkaline urine as a symptom of nephritis is this, that very often there is no other obvious sign of the disease. In such cases the inflammation runs a very insidious course. A man complains of some languor, and looks a little out of health, and he may or may not have some slight aching about the loins, and these may be the only symptoms of the disease except the alkaline urine.

Dr. Bird could not believe that the mere secretion of alkaline urine, when there was no irritation from a calculus, was sufficient to produce vomiting. He referred to Guy's Hospital Reports, which contained a paper by Dr. Barlow, as evidence in favour of this opinion.—*Lond. Med. Gazette.*—April, 1846.

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23. *Neuroplasty or Ganglionary Alteration of the Peripheral Nerves.*—By M. SERRES In 1843 I called the attention of the Academy to a general disease of the nervou system which had not been previously noticed. This disease I termed *neuroplasty* its anatomical and fundamental character consisting in a ganglionary transforma tion of the ramifications of the nerves of life, of relation, and of organic life; n disease within my knowledge affects any organic system so universally, for I hav counted two hundred preternatural ganglia on a single limb.

The two former cases which I observed occurred in subjects in the school anatomy; they were precisely similar to each other, and a third, perfectly identica with them, was observed by MM. Maher and Payen at Brest. The similarity the alteration in those three cases,—the form of the ganglionary enlargements,– their situation,—their structure,—their resemblance on comparison to the superi cervical ganglion,—the examination of their intimate structure with the micr scope,—everything confirmed the idea that the nervous tissue was the seat of th disease, and that it had sustained, under the influence of disease, an enlargeme similar to that which exists naturally on certain cords of the sympathetic nerve an of the nerves of relation.

The perfect integrity of the spinal marrow and of the brain in those three cas occasioned, however, some doubts as to the nature of those enlargements; for was difficult to admit that such extensive disease of the peripheral nerves cou exist without any trace of alteration in the cerebro-spinal axis.

These doubts were strengthened by our ignorance of the phenomena which had preceded and accompained this alteration during life: the disease having been in the three cases only detected after death, and little more being known of the condition of the patients than the one fact common to all—viz., that they had all died of entero-mesenteric or typhoid fever; with regard to the case observed by MM. Maher and Payen, it is, however, further known that during the entire course of the malady there was no symptom indicating any disturbance of the nervous system. The contradiction between the morbid alterations and the absence of phenomena corresponding to those phenomena was striking, and to a certain extent justified the doubts expressed by some physiologists as to the nature of those preternatural ganglia.

A most remarkable case is at present under my observation. The phenomena which preceded and accompany it indicate so decided a disturbance of the nervous system that I publish it at once—on the one hand, to dispel the uncertainty occasioned by the previous cases,—on the other, to elucidate the diagnosis of an affection so uncommon in its nature and so destructive in its effects. Though the general state of the patient in question has been somewhat ameliorated under treatment, yet I do not expect that he will recover, as every day enlargements, not perceptible the day previous, form on the trajet of the superficial nerves.

P. A. Legrand, aged 26, a smith, was admitted to hospital April 14, 1836. His parents are healthy; his constitution seems robust, though, he says, he has become much thinner latterly. Until within the last year he rather frequently exceeded in drink. In April, 1845, after working eighteen hours daily for several days, he, in the course of one night, without any previous symptom, lost the sight of the left eye completely. That eye remains blind, and there also exists complete paralysis of the left levator palpebræ muscle.

Last January he fell insensible in the street with all the symptoms of a fit of epilepsy; the fit commenced with slight convulsions and rather sharp pain in the right thumb; the other fingers then became convulsed and painful, which caused clenching of the hand; the pain extended along the arm to the larynx, where he experienced such a sense of suffocation that he could not articulate; vertigo, tinnitus aurium, and insensibility then supervened. He cannot state how long the fit lasted. The evening of the same day he experienced another, but much less intense fit, characterized by very severe pain in the arm and forearm, with flexion of the thumb in the palm of the hand, but without insensibility. The day following his health was as usual, save that the right arm remained feeble and somewhat benumbed for several days.

On the 25th February there was a similar attack, with vertigo and imperfect loss of sensibility; and during the night two similar but milder attacks occurred. As the arm now remained numb, and the fingers were affected with tingling, he was admitted to La Charité, which he left in nine days, those symptoms having then disappeared.

On the 4th April he was again obliged to give up work in consequence of pain and weakness in both arms. In the right arm the pain was fixed about the center of the biceps; in the left it occupied the center of the dorsum of the forearm.

On the 8th he was threatened with two fits of epilepsy, which, however, he arrested by crossing the arms, and preventing the flexion of the thumbs.

On the 14th he was admitted to La Pitié, where he was treated at first for rheumatic pains, but in a few days several small hard tumours, painful on pressure, were observed in the substance of the right biceps, and also on the external aspect of the left forearm. He now began to experience pains in the legs; so that, as he was previously unable to use his hands, he was compelled to remain in bed, being unable either to stand or to walk, and a few days subsequently tumours, similar to those occupying the upper extremities, were discovered on the lower.

At present (May 15th), those tumours are disseminated over the entire surface of the body, but they are more numerous on the extremities than on the trunk, and on the upper than on the lower. In the extremities they occur either immediately beneath the skin, under the aponeurosis, or in the substance of the muscles. The skin over them is not discoloured. Their disposition presents this peculiarity, that they do not extend below the lower third of the muscles, and none occur in the course of the tendons or of the synovial sheaths. In one point only two of them seem adherent to the bone, though they are separable from it by continued pressure. No trace of those tumours can be discovered in the neck, on the hands, nor on the feet.

But few occur on the trunk, and here they are all subcutaneous, while in the limbs the majority are situated in the substance of the muscles, and they are more numerous the more the muscles are developed. Thus in the arm they chiefly occupy the biceps. They consequently are more numerous in the sense of flexion than in that of extension, which explains the position of the patient, to be presently noticed. But one of those tumours occupies the course of a nerve of any size. It is situated over the external popliteal nerve corresponding to the head of the tibia; none occur over the great nervo-vascular trunks of the groin, ham, or axilla.

The size of those tumors is very variable; the smallest nearly equal a pea in bulk, the largest are the size of an almond; some of them are spherical, but they are generally oval, seldom fusiform; their surface is smooth and polished; their consistence firm and resisting; they do not seem to adhere to the subjacent tissue. Those which are subcutaneous are very soft, and nothing can be more variable than the sensation they communicate when compressed. In effect those of older formation are completely indolent and painless on pressure, while others are extremely painful on the gentlest touch, and others again are not painful except on firm pressure. A peculiar character of the pain is, that it is entirely local, and does not radiate to the neighbouring parts. Muscular tension produces the same effect on those tumours as pressure with the finger does, and as they are more numerous in the sense of flexion than of extension, the limbs are permanently semiflexed. The tumours, scarcely perceptible to the eye when the muscles are relaxed, become prominent externally when the muscles are thrown into action.

Generally speaking, those tumours are developed almost symmetrically on both sides of the middle line, and in homologous muscles. The general health of the patient is tolerably good. The functions are natural. On his first admission to hospital there was some diarrhœa, which has entirely ceased for the last fortnight; pulse 75; respiration 18 in the minute. His intellect seems quite unaffected.

Such is the history of this singular affection, the diagnosis of which would be impossible if the anatomical examination of the three preceding cases had not revealed the probable nature of those tumours.—*Dublin Med. Press*, from *Comptes Rendus.*

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24. *On the Treatment of Pneumonia.*—The *Lancet* (Aug. 22, 1846), contains an interesting paper on this subject read at the Harveian Society, by Dr. A. T. Thomson. The indications to be fulfilled in the treatment of pneumonia, the author conceives to be—first, to subdue inflammation; secondly, to excite the capillaries so as to prevent extraneous depositions in the tissue of the diseased organ; thirdly, to diminish excitability, and consequently, the susceptibility of impression, and thus to guard against relapse.

With regard to the first indication, there can be no difference of opinion respecting the propriety of blood-letting in pneumonia. It was the custom of the older physicians to bleed, ad deliquium, in every stage of the disease. It was the practice of Sydenham: his words are, "venæsectionem sæpe repetitam videretur indicare." Cullen recommended bleeding, in quantity sufficient to cause remission of pain and relief of the respiration, or when these did not appear, the bleeding was to be continued to syncope: he also recommended to repeat the venesection, even in the course of the *same* day, and to the same quantity as before, should the pain and dyspnœa recur. He adds, "sometimes the second bleeding may be larger than the first;"—"a quantity," he says, "of from four to five pounds, in the course of two or three days, is generally as much as such patients will safely bear." This practice is still followed by some physicians in the present day, both in this country and on the continent; and occasionally from thirty to forty ounces of blood have been abstracted, in the first instance; and the bleeding repeated, on the following day, to a less extent. Andral and Chomel urge the employment of large and repeated bleedings; and even Laennec, who does not implicitly rely upon the use of the lancet, recommends ample venesection in the commencement of the disease. There can be no doubt, not only of the propriety but of the absolute necessity of the moderate abstraction of blood, in the commencement of the treatment of pneumonia; but I am convinced that the profuse and repeated bleedings usually resorted to are not only unnecessary but hurtful. In the present day, we are properly more guided by the physical signs obtained by means of the stethoscope, than by the cupped and buffed appearance of the blood; and the existence of the crepitant râle is also regarded as a safer guide for the repetition of the venesection than buffy blood. With respect to the influence of blood-letting, to whatever extent it may be carried, much depends on the early period at which it is performed: for, when hepatization, or solidification from effusion has taken place, it is seldom productive of benefit: on the contrary, the heart becomes more irritable, and a reaction follows, which quickens the circulation, increases the dyspnœa, and hurries the disorganizing process. Some continental physicians, however, and some practitioners in this country, recommend venesection to be repeated, even under these circumstances. My own experience is decidedly against this practice; and unless pneumonia be complicated with pleurisy, I have never seen any advantage derived either from topical bleeding or from blisters, when consolidation had really commenced.

But admitting all the advantages that can be anticipated from blood-letting, and regarding as visionary the idea that it may cause the fever to assume a typhoid type, except when such an epidemic tendency prevails, I may venture to affirm, that as large abstractions of blood cannot fail to give a severe shock to the constitution, as well as to protract the convalescence, and weaken the future energy of the habit, whatever can lessen the necessity for such large bleedings, and, at the same time, cure the disease, must be regarded as of great importance in the treatment of pneumonia. The chief object of my communication is to suggest that this substitute for the repeated use of the lancet will be found in the judicious administration of full doses of the potassio-tartrate of antimony.

This preparation of antimony has long been regarded as a powerful antifebrifuge; but its contra-stimulant influence, or its power of subduing acute inflammation, independent of its nauseating or diaphoretic property, was first established by Rasori, an Italian physician, in 1806; and the experience of the profession, both at home and abroad, since that time, has justified the encomiums which he bestowed upon it. The doses, however, which he ventured to prescribe, and which were also given by those who followed his practice in this country, were occasionally productive of harm, and therefore the remedy was either seldom prescribed, or the prescriber returned to small, nauseating doses, totally inadequate to resolve the inflammation. The opportunities which I have had of witnessing its influence have convinced me that doses of a grain, or a grain and a half, administered every third or fourth hour, after a moderate venesection, are sufficient to insure every advantage that can be anticipated from the employment of tartar emetic in pneumonia.

My practice, as soon as I have fully satisfied myself of the existence of the disease, and if the attack has not run on to the second stage, is to order one bleeding to the amount of sixteen or twenty ounces; to follow this, immediately, with three or four grains of calomel and one grain of opium, with the view of preventing that nervous irritability which often succeeds the use of the lancet, and of sustaining the beneficial impression made on the system by the blood-letting. In two hours afterwards, I give one grain of potassio-tartrate of antimony in a fluid ounce and a half of emulsion of bitter almonds, and repeat this dose every third or fourth hour, until a decided diminution of inflammatory action takes place—that is, until the crepitation has nearly disappeared, and the sputa are no longer rusty and tenacious. The intervals between the doses of the tartar emetic are then extended to six hours, and afterwards to eight hours, and so continued until convalescence is confirmed. I prefer the bitter almond emulsion, on account of its containing hydrocyanic acid, which has a sedative quality, and a more decided influence in quieting the nervous system, and abating the cough, than small doses of opium. When the pneumonia is uncomplicated, this plan, with the occasional aid of some mild aperient, has, in my hands, seldom failed to carry the case to a successful termination. When the attack has passed beyond the first stage, when dullness on percussion indicates hepatization, then the object of the second indication—namely, to excite the capillaries and prevent farther depositions—requires attention; and, in order to fulfil this indication, I order four or five grains of mercury with chalk, or one grain of calomel, to be given in each interval of the administration of the tartar emetic. In the statistical table, twenty-three out of the thirty-eight cases were treated with mercurials in addition to the tartar emetic, because, in hospital practice, the patients are seldom brought in until the disease has progressed, and the solid effusion, if I may employ such a term, has taken place. But in the remaining fifteen cases no mercurial was employed; the tartar emetic was alone trusted to, and it did not disappoint my anticipations; but in no instance was its employment commenced until after the abstraction of blood, either by the lancet or by cupping. I have never carried the mercurial action to ptyalism; but it is requisite to procure the usual symptoms of its decided impression on the habit, by producing slight tenderness of the gums. In ordinary cases, I have seldom had occasion to order blisters; but, from the nature of hospital practice, they are demanded, and they were employed in sixteen of the cases in the statistical table. Such are the advantages of moderate doses of tartar emetic in the treatment of pneumonia. In the same manner as when larger doses are administered, vomiting almost always occurs after the first and the second dose of the remedy; but on the third dose the tolerance is established, and even when the dose is increased, neither nausea nor vomiting afterwards takes place.

If I may be permitted to state a hypothetical opinion, I should venture to offer my view of what has been termed the tolerance of the habit against the well-known influence of tartar emetic, when administered in moderately large doses. It has been supposed by Rasori and others, that the inflammatory state of the system in pneumonia is the cause of this tolerance, and that this would cease if the remedy were continued after every trace of general inflammation had disappeared. I am, however, of opinion, that the tolerance does not depend on the state of the habit, but solely on the topical influence of the tartar emetic on the mucous membrane; and upon its influence, also, on that membrane operating as a counter-irritant; and to this its beneficial effect in subduing inflammation is to be attributed. When a grain or more of tartar-emetic is swallowed, a portion is carried into the circulation, and, acting on the nervous centres, it causes vomiting; but a portion also acts topically on the mucous membrane, and sets up subacute inflammatory action there. The second dose also causes vomiting, because the inflammation, although extended, yet is not sufficient to prevent absorption; but when the third dose is given, the absorption no longer takes place, and consequently no vomiting is induced. It is a well-established fact, that an inflamed surface is incompatible with absorption; and to this, in a great measure, are we to attribute the accumulation of serum in serous cavities in dropsy. If my views be admitted, I would farther state, that the determination of blood to so extended a surface as that of the mucous membrane is, in my opinion, sufficient to relieve the congestion in the lungs; and that it is, in truth, the cause of the benefit which follows the employment of the tartar emetic. Such is my opinion of the rationale of the action of tartar emetic in pneumonia; but on this part of my subject it is not my intention to insist, my chief object being to demonstrate, that this powerful therapeutical agent can perform all that can be expected from its administration in much smaller doses than Rasori and his followers have employed; that such doses incur no risk, seldom bringing on diarrhœa, whilst hypercatharsis has followed the administration of large doses; and that in such doses it sets aside the necessity of large and repeated abstractions of blood, and consequently cures the disease without that injurious impression on the habit which has been frequently seen to follow copious blood-letting. Another advantage obtained by this mode of practice in pneumonia is the gradual advancement of the convalescence, and the restoration of the patient to health and vigour without the aid of tonics By gradually letting down the action of the tartar emetic, the stomach recovers its tone, and the assimilating function rapidly restores any waste which the necessary treatment of the disease may have occasioned.

Dr. T. appends a statistical table of 38 cases treated by the method he recom mends, but his views of the advantages of that mode of treatment are founded upon 62 cases, a tolerably ample experience.

25. *Acidity.*—Dr. Robert Dick, in an article in the *Lancet*, (Aug. 22, 1846,) remarks that there is a difference between acidity which is merely *in* the stomach, and acidity which is *from* the stomach; and the treatment of these is also different. Acidity of the former sort arises usually from natural changes in the food, or from improper articles of diet. If from the former of these, we may infer that there is functional debility of stomach, probably associated with, or dependent on, anæmia of the mucous coat, and a consequent deficiency in the secretion of the gastric juice, bile, pancreatic fluid, and the mucus; that hence digestion is feeble and tardy, so much so that the ordinary chemical, non-vital changes in the food, which the mere heat and moisture of the stomach are apt to favour, take place. The cure of this kind, and from the causes just named, is obviously dependent on tonics, with food stimulant in itself or rendered so by condiments.

Acidity *from* the stomach—that is, consisting of morbid matters actually secreted by the organ itself, requires other measures. And here it may be observed, that sometimes the feeling of acidity, or, to use the familiar word, heartburn, is caused by secretions extremely slightly acid, sometimes not appreciably so. Acrid, however, they must be. In other cases, the feeling of acidity does not seem to depend either on acidity or acridity of the stomachic contents or secretions, but either on a peculiar state of the gastric nerves, or on morbid sensibility, with or without hyperæmia of the gastric mucous membrane. These several kinds of heartburn require separate and different treatment.

1. Acidity caused by morbid secretions. These morbid secretions are, in fact, one or more of the following acids:—the hydrochloric, lactic, oxalic, butyric, acetic, carbonic. The last is, perhaps, seldom the cause of heartburn.

In most cases, heartburn of this nature requires alteratives. This is more especially the case if the acidity be owing to excess of the hydrochloric or lactic acids, or to the presence of the butyric. The alteratives from which we may principally select, are, mercury, iodine, potassio-tartrate of antimony, nitrate of silver, bismuth, ipecacuanha, &c.; several of these may be combined with advantage. That the iodide of mercury may be chosen; and ipecacuanha may be usefully allied to mercury, iodine, or nitrate of silver, severally; all of them may also be united, if necessary, with purgatives, such as the extracts of rhubarb, aloes, or colocynth, with scammony, &c., and sometimes, most beneficially, with the extract of colchicum.

Meanwhile much attention must be given to the state of the urine, and the action of the skin. The condition of the urine is a matter of much importance. It must be our care to detect and re-adjust any departure from the normal equilibrium of that important excretion, any excess or deficiency of its constituents. In general, it may be remarked that morbid stomachic secretions are more often associated with and dependent on a deficiency of some of the constituents of the urine, than with excess of these.

2. When heartburn is attended with a red tongue, thirst, pain at the epigastrium, and a distinct sensation of coolness in the stomach, on cold fluids being swallowed—circumstances indicating hyperæmia and erythema of the mucous membrane—solutions of the acetate of ammonia, nitrate of potass, borax, and even dilutions of the acetic, tartaric, and sulphuric acids, are to be employed. Seltzer water, iced drinks, lemonade, grapes, ripe apples and pears, &c., may also be used as ordinary drink and food.

3. That species of heartburn which is a mere variety of gastrodynia, and is accompanied with no derangement of secretion, no hyperæmia or tumidity of the mucous membrane, is best treated with pills of the tris-nitrate of bismuth and hyoscyamus, nitrate of silver and conium, oxide of zinc and extract of chamomile. To these may be conjoined draughts of the infusions of orange peel, of taraxacum, and of gentian.

26. *Spontaneous Rupture of the Stomach.*—Two cases of this accident have lately been recorded, which are remarkable in not having been preceded by ulceration or violence, but were, strictly speaking, spontaneous. The first, which is by Dr

Morici,[*] is as follows:—A man, æt. 30, was seized with intermittent fever, which was cured by quinine in about ten days. He was subsequently seized with symptoms of renal calculus, which had nearly subsided, when he suddenly fell down and expired. After death the thoracic viscera were found healthy, as were also the abdominal organs, with the exception of the stomach, which exhibited a rupture upon its anterior surface of three fingers' length, through which its contents had been extravasated. The parietes of the organ had not undergone any pathological change.

A similar case occurred in the Marylebone infirmary. In this instance the pylorus was blocked up by a piece of potato.[†]

A singular instance, in which spontaneous rupture of the stomach was followed by general emphysema, appears in the 'Annales de la Société de Médecine de Gand.' Its details are given below.

"A surgeon of Gand was seized with a sudden indisposition after a meal; his skin was cold and corrugated, and covered with perspiration; pulse hard and scarcely perceptible; voice lost; respiration anxious; abdomen tense and tympanitic. An emollient enema was administered to him; suddenly, while making an effort to go to the water-closet, an emphysematous swelling appeared extending up the neck, putting the patient into the most imminent danger of suffocation; the action of the lungs was suspended, the swelling increasing at each inspiration; the patient in the meantime performing the action of deglutition as it were in spite of himself. Presently his appearance was so altered that hardly anything of the human form was discernible; he retained his consciousness, however, and took part in the consultation held by three of his professional brethren about him. He experienced a burning thirst, and was calling every instant for cold water, but it was remarked that the difficulty of swallowing became momentarily greater, while the motions of the act were rapidly performed whether he tried to drink or not. In some minutes he expired in making an effort to get down a small quantity of water. The body was soon inflated like a bladder distended with air. *Dissection.* The enormous swelling of the front of the abdomen did not subside even on cutting into the cavity of the peritoneum, in which there was no blood. A second transverse incision exposed the stomach, which immediately protruded in consequence of its great distension with air, and was so large as to reach from the epigastrium to the iliac fossa; its muscular coat seemed hypertrophied. On drawing forward this viscus and tearing through the layers of omentum which connected it with the parts above, the air it contained rushed out by a large opening which extended from the cardiac to the pyloric orifice, along the lesser curvature. In this region the organ was found softened into a pultaceous mass that involved both the muscular and mucous coats; the latter tunic was injected strongly with dark-coloured blood, which appearance was insensibly lost near the rent. There was no trace of ulceration—no swelling in the edges of the ruptured part—no adhesions surrounding it; the peritoneum was natural. The lungs had subsided round the spine; the cavities of the heart were filled with black blood; there was a collection of serum in the right pleura and in the pericardium."—*Ranking's Abstract*, vol. iii.

27. *Pathology and Treatment of Aphonia.* By John Bishop.—It is well known that many persons, especially females of a delicate and relaxed habit, and otherwise of a nervous temperament, become affected with aphonia on being exposed to the cold or humid states of atmosphere. Some labour under loss of voice during the whole winter; whilst in others of a stronger constitution, the malady does not often continue longer than six or eight weeks. In order to ascertain the cause of the extinction of voice under the above-mentioned circumstances, it will be necessary to consider the relation of the functions of the vocal chords to the tissues of which the vocal tube is composed. It is not my present purpose to determine whether the vocal apparatus constitutes a stringed, a reeded, or a wind instrument, or whether it is a combination of all these different kinds of instruments, because this would lead to investigations involving the whole theory of the physiology of the voice. Let us, however, suppose it demonstrable that the action o

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[*] Annali Universali.

[†] Lancet, Jan. 3, 1846.

the glottis in the production of sound resembles that of a reed, connected with a membranous tube; and let us take it for granted, as an established fact, that the membranes surrounding the glottis are susceptible of various degrees of tension and elasticity, enabling them to exercise a certain influence in modifying and controlling the sounds which are generated by the vibratory movements of the vocal ligaments. Let us next examine the effects which would be produced on the glottis, supposing the membranous walls of the larynx and fauces to become relaxed, or inelastic, or to lose their tension. When any stretched membranous surface, such as the head of a drum, (which is well known to be composed of animal skin,) is subjected to a very moist state of the air, it becomes relaxed and inelastic; such also appears to be the effect of moisture on the mucous membranes, and several other animal tissues. Now it is found that if we take a reed, and place it in a membranous tube, and cause it to vibrate by passing a current of air over its tongue, the reed will continue to sound as long as the membranes preserve their tension and elasticity; but the moment they are moistened and become relaxed, it ceases to sound, and will not, by any means that we can employ, again produce a sound whilst it is in contact with the moist membranes; but as soon as they become dry, and resume their elasticity, the reed will again yield its sounds as before. These, then, are the acoustic effects of variations of tension and elasticity in membranes, when placed in juxtaposition with a reed, in the manner above described; therefore, as the vocal ligaments are placed under circumstances analogous to those of the reed in the case just mentioned, we can easily perceive why they should lose the power of producing sounds, when the membranes of the vocal tube either lose their elasticity, or cannot acquire from the connected muscles the tension proper to them in their normal condition.

There are several causes, independently of the hygrometric state of the atmosphere, which tend to relax the fauces and soft parts adjacent to the larynx, such as temperature, nervous excitement, and over-exertion of the vocal organs. It is well known how rapidly the transition from one state to another takes place in the mucous membranes. No sooner is the surface of these membranes exposed to sudden changes of temperature and moisture, than they begin to secrete the fluid peculiar to them. This secretion tends to clog the vibrating surfaces in contact with the larynx, and often impedes the action of the thyro-arytenoid ligaments. The voice sinks in pitch if the relaxation is only partial, as does a reed by partially moistening the membranous tube in which it is placed. When the mucous membranes which line the vocal tube have received such a shock as to induce inflammatory action, the train of symptoms is altogether different, and cough and irritation supervene. In this case the voice is not extinguished, and the complaint requires a very different kind of treatment. It is not, however, proposed to include this condition, which is of an inflammatory character, in our present inquiry. The degree of mischief produced on the membrane often decreases in proportion as the distance from the respiratory apertures increases; and thus we often find that the nostrils are irritated and relaxed, without the disorder proceeding further. The fauces are next affected; and it is the derangement of these parts, in consequence of their having less mechanical support, that chiefly tends to extinguish the sounds of the glottis. The trachea is the part least liable to be affected by this kind of relaxation, owing to its component tissues being chiefly of a cartilaginous structure, and to its greater distance from the origin of the mischief.

If we concur in these general principles, we may now advance a step further, and proceed to consider the methods best calculated to restore the vocal tube, when thus disordered, to its normal functions. The peculiar state of the mucous membrane and adjacent parts, now under consideration, appears to be of an asthenic character; on which account depletion, counter-irritation, and other modes of antiphlogistic treatment, do no good, but generally do harm; and stimulants and astringents, applied locally, are the only remedies which tend to restore the mucous membranes to a healthy condition. A strong solution of lunar caustic, applied to the fauces with a camel's-hair brush, produces the most beneficial effects, and may be used in preference to any other remedy. Gargles of capsicum also do good, but are certainly not so efficacious as the solution of nitrate of silver.

Case I.—Mrs. H., a professional singer, suffered occasionally from loss of voice, which often lasted from six to eight weeks. On one occasion she was engaged to sing at a concert in the course of a few days, when one of these attacks came on, and she was greatly alarmed at the prospect of not being able to fulfil her engagement. Under these circumstances I applied to the fauces a solution of nitrate of silver, of the strength of ten grains to one ounce of distilled water, and repeated the application on the following morning. Under this treatment the power of voice returned, and she was to able to sing at the concert on the third day.

Case II.—Mrs. M., a lady who had suffered every winter a loss of voice, was placed under the same treatment, with similar results, and is now so sensible of its advantage, that she has recourse to it whenever she happens to suffer from cold, and has not lost her voice for several years past.

Case III.—Mr. R., a gentleman possessing an extremely fine bass voice, consulted me under the following symptoms. He found that he had begun to lose control over the functions of the larynx: he could not sustain any note of equal intensity during the usual length of time, and the vocal ligaments appeared to be uncertain in their action. This was a case of relaxation combined with nervous irritation. Immediately after the application of the caustic solution to the fauces, I observed that the pitch of his voice in speaking was slightly elevated. This plan was continued, in conjunction with the use of tonics, and he speedily became relieved.

When the relaxed condition of the vocal tube arises from over-exertion in speaking, singing, &c., the same treament is highly beneficial, and complete rest of the vocal apparatus is indispensable for the recovery of a healthy control over the voice. Many persons lose a portion of their range of voice by exercising it too much when in this state. When Grassini, the celebrated singer, came from Italy to England, the humidity and variable temperature of the air in this country so relaxed the membranous portions of her respiratory tube, that her voice sunk nearly an octave in pitch, and was changed from a soprano to a contralto character. The effect, however, was that she acquired great celebrity, in consequence of the fine quality and range of her lower notes; but on returning to the milder climate of Italy, the soprano range of voice returned, and she lost at the same time the power of uttering that range of notes which had conferred on her voice its attractive character. In this case the relaxed condition of the vocal membranes was productive of beneficial effects; but it is presumed such cases are extremely rare.

When aphonia arises from nervous excitement, we must look for the origin of the affection beyond the mere office of the soft parts of the vocal tube. This condition may often be traced to the nervous centre, most commonly arises from an asthenic state, and is often associated with an hysterical disposition. In some hysterical cases, however, an opposite state to that of aphonia presents itself. A patient was placed under my care, who uttered a constant involuntary bark, like that of a dog, very loud and discordant. It need scarcely be mentioned that no beneficial result can be expected in such a case from mere local treatment. Sudden alarm and over excitement will often cause aphonia. When this is produced by an altered state of the nervous functions, galvanism is said to be beneficial. A case of this description is recorded in the Encyclographi Médicale. A young man, having killed a comrade in a duel, became epileptic, and lost his voice from the excitement. All other treatment having failed, his medical attendants had recourse to electricity. A galvanic battery of 30 pairs of plates was employed; the zinc pole was applied to the first cervical vertebra, and the coppe pole to the side of the larynx; 200 shocks were given the first day, and 300 on the second, when the parts became somewhat sensible. Two days' respite was then allowed, and at the third sitting the patient received 300 shocks from 70 pairs of plates. On the fourth day, 400 shocks from 70 pairs were administered; and after the latter application the patient began to utter a feeble cry. Six days were then allowed to elapse, after which 300 shocks were given with a pile of 30 plates. The treatment was continued a few days longer, and at the last fou sittings 400 shocks were administered through the tongue; the zinc pole being applied to the first cervical vertebra, and the copper pole under the tongue. By means of this treatment the voice gradually returned to its natural state, and at th end of twelve operations he was convalescent. In another case aphonia resulted from sudden surprise and over-exertion. The patient was a tradesman residing in St. Martin's Lane, who was standing in his shop, when an impudent thief entered, very coolly took up some article before his face, and bolted away. The tradesman ran to the door, crying "Stop thief!" as loud as he could vociferate, and was about to repeat the same exclamation, when he suddenly found himself unable to do so. The larynx was rendered mute, and he remained incapable of uttering a vocal sound for the space of eight months, when his voice returned unimpaired.

The more aggravated forms of aphonia, such as those arising from diseases of the larynx, or morbid conditions of the brain, most commonly baffle every method of treatment hitherto devised; but the investigation of these cases would lead to very lengthened details, besides being irrelevant to the class of cases selected for this communication, the scientific treatment of which often leads to very gratifying and satisfactory results.—*Transaction of London Med. Soc.*, vol. i.

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28. *Diagnosis of Disease of Mitral Valve of the Heart.*—Dr. J. J. Furnival relates in the *Lancet*, (March 21st, 1846,) a case of disease of the mitral valve of the heart, and offers some interesting remarks on the diagnosis of that affection. This he observes is founded on the physical and general signs. Of the *physical*, we know that the sounds usually considered distinctive of mitral-valve disease, may not, at times, or in certain cases, be heard at all, and yet disease may exist; though when they are audible, there is, perhaps, hardly any other cardial lesion which is more easily or more certainly detected by a good practical auscultator than this; or which, on the other hand, would more easily pass undetected by those who rely solely on the general symptoms, and who do not use the stethoscope. Accordingly, no good auscultator is likely, in these days, to deny the possibility of pointing out the diseased valve when signs are in any degree clear. The objection, that as all the valves are so clustered together as to be covered by the open end of the stethoscope, the source of each murmur cannot be made out, however probable it seems, has been removed, by attending to the line of direction in which the murmur is propagated, while our difficulty is further lessened by the fact, that the left or arterial heart is the part mostly affected in valvular disease. To any one who has dissected the muscular fibres of the left ventricle, and has observed how they are connected with the columnæ carneæ, and how they all converge to a point, almost at the apex of the heart, the reason becomes at once apparent, how the murmur from a diseased mitral valve is heard loudest at or near the cardiac apex. The practical man is contented with the fact that it is so, and that fact has been verified by symptoms during life, and by examinations after death.

We must not, however, forget, that although we may have, in the vast majority of cases, no difficulty in diagnosis, yet an exceptional case may occur in which the murmur may be masked by other sounds; or even may not exist; or after having existed, may disappear altogether. As to the masking by other sounds, the auscultator will generally, with care, avoid error: as to the murmur not being present while disease exists in the valve, I have read of such cases, but never met with them; and as to the disappearance of the murmurs, this may arise from the diseased action increasing, and so implicating the valve that too small an opening is left to allow of the formation of a murmur. But here the previous history will have shown what the case has been, and is.

The distinctive physical sign of a patulous mitral valve is an abnormal murmur, generally of a blowing character, heard with the systolic or first sound of the heart, low down, below the line level with the nipple, and between the nipple and the left edge of the sternum. In most cases, this systolic murmur is also heard in the back, to the left of the spine, about the sixth or seventh dorsal vertebra, and near the angle of the left scapula; and this last site of murmur is very diagnostic. The murmur is also sometimes heard in the axilla; yet at the base of the heart the murmur is either very indistinct, or not to be heard at all, the two natural sounds being distinct and clear, as was the case at the head of these observations.

This murmur may mask, or take the place of the whole of the first sound, or of only a portion of it. The systolic murmur, which may most readily be mistaken for this one proceeding from the mitral valve, is caused by some obstruction to the blood issuing from the left ventricle; and the disorder occasioning this last sound is called obstructive disease of the aortic valves. The distinction between the two is founded on the fact, that in the mitral-valve disease there is no propagation of the murmur up the aorta, and into the neck, which is observed in aortic disease; while, on the other hand, in this last disease there will be no abnormal murmur at the heart's apex.

But there are yet other sources of a systolic murmur; it may arise in a fit of hysteria. Here no mistake is probable; for as the murmur arose with the paroxysm, so it will usually cease with it, or very soon afterwards.

It is a not unfrequent accompaniment of chlorosis and anæmia. Here the history makes manifest the cause, and we shall hear, in the same case, various murmurs in many of the superficial arteries of the neck, and even limbs. In the neck, over the carotid artery, we shall not only have the bellows murmur, (and this alone is distinctive,) but also a humming sound, which has been described to be like that sound which reaches the ear from a marine shell. This sound is said to proceed from the jugular vein; it may be intercepted by pressing the finger firmly on the part of the vein above the stethoscope. If we press the instrument too forcibly on the vein, we shall not hear the sound at all.

We may have a systolic murmur from deformity of the chest so displacing and pushing about the heart, as to cause this first sound to become almost abnormal in character—quite a whiz, as a late writer expresses it. This whiz is produced by mechanical impediment, but the impediment is without the heart, and not within it. Here the deformity, which is visible to the eye, reveals the mode of formation of the murmur.

It has been said that the natural murmur of respiration may closely resemble this murmur, which is, as I have said, of a blowing character, not unlike that of the breathing; but this source of fallacy will never perplex the auscultator who causes his patient to hold his breath for a few seconds; and this precaution is invariably taken by every well-informed auscultator.

Finally, it has been lately said by Dr. Latham, and before him by Dr. Zehetmayer, that tuberculosis may cause a systolic murmur, and the corroboration of an interesting fact thus afforded by two practical men of professional eminence. living in different countries, must be calculated to fix the attention of our medical brethren on this hitherto unnoticed symptom.

Dr. Zehetmayer published in 1844, and Dr. Latham in 1845. The former says: —"The first sound in the pulmonary artery is at times accompanied by a murmur, if there is an insufficiency of the mitral valve, (Skoda,) and it must take its origin from a loosening or softening of the internal coat of the vessel. I have repeatedly heard in phthisical persons, in the second intercostal space, a decided bellows murmur, instead of the first sound of the pulmonary artery, and in a place where one could not doubt that tuberculous infiltration was present. No anomaly in the vessel could be detected by post-mortem examination."

Dr. Latham writes thus, at page 66 of his late excellent volume on Clinical Medicine: "Fancy a line drawn from the left side of the sternum along the upper edge of the second costal cartilage, and continued an inch along the second rib and another line drawn from the sternum along the lower edge of the third costal cartilage, and continued an inch along the third rib. Between these two lines a space is included, in the whole or part of which a murmur is often audible, coincident with the systole of the heart, when no such murmur can be perceived either in the præcordial region, or in the course of the aorta, or in the carotids, or in any part of the arterial system; but here, and here only. It is a gentle bellows murmur, quite obvious to the ear, and unmistakeable in its character.

"Of such a murmur, often audible in this situation exclusively, I am certain as a matter of fact, and certain, too, of its very remarkable accompaniment: I have witnessed it either in those who were undeniably consumptive, or in those who were too justly suspected of being so. I cannot say in what proportion of the phthisical it occurs; but I am continually meeting with it." * * *

Some German auscultators have attempted to lay down a diagnosis, founded on the sharpness or alteration of the second pulmonary artery sound. Dr. Skoda, o

Vienna, was the first, I believe, to tell us, that when we meet with a systolic murmur in the left ventricle, and also an augmentation of the second sound in the pulmonary artery, we may safely and certainly conclude that there is an insufficiency of the mitral valve; and he attempts to explain the asserted fact, by referring it to distension of the right ventricle and of the pulmonary artery, produced by the impeded circulation, first through the mitral valve, and then through the lungs; for the distended artery reacts with unusual force on the pulmonary semilunar valves.

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I do not recollect reading any author amongst the British who has directed attention to the second sound in the pulmonary artery as a diagnostic sign, except Dr. Hope, and he makes the augmentation of it to depend on hypertrophy of the right ventricle. Drs. Skoda and Zehetmayer both seem to think that this augmented sound is distinctive of, and caused by, three states.—1st, of hypertrophy of the right ventricle; 2d, of distension of it; and 3d, of mitral-valve disease.

There is little doubt, that this increased sound generally accompanies advanced hypertrophy of the right ventricle, because there is an increased power of propulsion in the ventricle, from increased substance and action of its muscular parietes. As to the second cause, this case may be cited as subversive of the opinion; for distension was repeatedly observed and made manifest by the slow upheaving of the ventricle, and the general signs; yet I never heard this increased sound, although on the watch for it. To the third cause of its existence, this case, as well as several others within my personal experience, gave a decided contradiction.

We must not expect to hear this sound so loud as that of the second sound of the aorta; for, according to the seemingly accurate experiments of Dr. Valentin, published in Henle's "Zeitschrift," "the mass of the right ventricle stands to that of the left in the exact proportion of one to two, and it may be concluded that in equal intensity of contractions, the muscular power will exhibit an analogous proportion. The hydrostatic blood pressure of the pulmonary artery must amount to half the hydrostatic pressure of the aorta, and the whole resistance of the bodily circulation must be exactly double that of the pulmonary circulation."

When investigating this sound, the proper place to examine is to the left of the sternum, on a level with the upper part of the third costal cartilage; while the second sound in the aorta is to be heard on the same level, but more on the sternum—i. e., a little more to the right. It may well be supposed that an ear practised in auscultation is necessary, both to distinguish between these two second sounds, and to ascertain the plus or minus of intensity in the sounds themselves. And when I read or hear of gentlemen who deny our power to ascertain these sounds, or to say which valve may be diseased under all circumstances, I cannot but think such gentlemen do not possess an average acuteness in hearing, or that they lack either the necessary practical discernment, or requisite patience; for the practitioner who relies on one, or even more examinations, may miss hearing this sound, as well as other sounds, because we know they vary with circumstances of comparative fullness of the heart or its reverse, or with deficiency or surplus of propelling power.

The *general* signs of this lesion are very distinctive in the early stages. And first, of dyspnœa. One moment's reflection on the immediate effect of the retropulsion of the waves of blood through the patulous mitral valve into the left auricle, and then into the lungs, will teach us to expect dyspnœa as the very first as well as the most constant sign. And so it is. If we find dyspnœa to exist, and yet no signs of pulmonic disease, or of other manifest cause for it present, we may suspect disease of the heart, almost from this symptom alone. In some cases which I have published, of diseases of the heart and their treatment, this shortness of breath was the only symptom for a long time observable, and it appeared long before the characteristic murmurs of diseased mitral valve could be detected. This dyspnœa causes congestion of the pulmonary vessels, and that is for a time relieved by medicines, without expectoration, or, in some cases, by an effusion of mucus on the mucous membrane; and thus the dyspnœa may continue without expectoration, or there may be, also, cough with mucous sputa.

Another early and very distinctive sign is, the peculiarity of the pulse, which peculiarity is not met with in any other disease so early as in this. It is very quick; not intermittent, but irregular, or rather, unequal, in the volume of each pulsation: first, a full artery is felt, then a seemingly half-filled one, and the coat of the artery cannot be felt distinctly; it is a soft pulse if no inflammation be present. A late reviewer found fault with me for overrating the importance of this pulse as a diagnostic, and affected to think there was some misprint; yet nevertheless, I wrote from very considerable experience; and the more I see of diseases of the heart, the more I am disposed to rely on the accuracy of what I have written thereupon. But it is best to leave the flippancy of reviewers to be dealt with by the good sense of the members of the medical profession, if they will but examine for themselves. I will repeat, that when we meet with such a pulse as the one described, either with or without other signs of heart disease, excepting dyspnœa, at an *early* period, we shall not do wrong, if we conclude that there is a patulous state of the mitral valve; for when it occurs in other diseases, it will do so only at the very latter stages.

In some persons, headache is early complained of; and headaches, both severe and long-continued, cause much suffering. These are doubtless caused by cerebral venous congestion, in consequence of the jugular and other veins being partly prevented from emptying themselves into the right auricle and ventricle. In some instances, this and other cerebral symptoms have been so prominent, as to mask and draw our attention from the original and originating disorder. Here the reflex function is sometimes called into action, and the brain becomes involved in that way. These symptoms are not so frequently met with in disease of the mitral valve as in pericarditis. In this latter case, is the phrenic nerve the medium to transmit the irritation, or is the cause a congestion of the vessels of the medulla spinalis induced by the blood being hindered flowing freely from it, in consequence of the highly impeded circulation in the large returning veins?

The liver also speedily feels the influence of this impeded state of the circulation. The venæ hepaticæ have mouths which are large and valveless; they therefore easily admit of reflux; and the vena cava abdominalis itself is over distended, from not being able to pour its contents into the cardiac cavities. Congestion of the liver follows. Hence the colourless motions so often observable in this disease, and various symptoms of gastric derangement, &c., which results have a pernicious reaction on the original disease, the gastric irritation adding to the cardiac irritation, and aggravating the paroxysms of dyspnœa as well as exciting them; while the retention of those matters which should be excreted from and by the agency of the liver, deprives us of one of our principal means of relieving the load of labour which is imposed upon the heart. This congestion of the liver may lead on to structural disease, to hardness, cirrhosis, or enlargement, which would soon be followed by ascites. The enlargement usually occurring in mitral-valve disease, takes place in the anterior parts of it, and as these parts make room for themselves, by pressing on the abdominal parietes, which easily give way, ascites does not most commonly occur. If the lobules Spigelii, or the parts adjacent to it, were enlarged, direct pressure would probably be exerted on the vena cava abdominalis, and ascites must follow.

Œdema of the feet and ankles is likewise an early symptom, for puffiness of the ankles soon occurs; and if the cardiac disease has taken place suddenly, or there has been a sudden increase of disease, the dropsical effusion involves the whole of the legs and thighs, and creeps up to and over the abdominal integuments with most alarming rapidity. In one of the cases which I have recorded, this increase of the dropsy was manifest at every morning and evening visit, till the skin seemed on the point of bursting, and becoming gangrenous from mere distension.

This effusion is not caused by lack of power in the absorbents, which continue to act with normal activity; and the gangrene, when it does occur, proceeds from distension, whereas the gangrene, which is sometimes met with in this country, but often in Germany, from disease of the aortic valves, partly arises from a want of the proper supply of healthy arterial blood, as well as from local congestion. One of our usual means of checking the progress of the effusion is here of little avail; I mean, laying the legs up on a level with the body, and so long as the mechanical difficulty remains in the heart unrelieved, this œdema goes on increasing, and ultimately augments the dyspnœa, &c.

The rationale of this early œdema is found in the fact that the blood in the ven cava abdominalis cannot pass freely in its proper course; it presses on the nearest valves in one single column, the apex of which is the heart, for there are no valves in this large abdominal vein or sinus. These valves are situated at the top of each femoral vein, and are raised by the pressure, and then the femoral and crural veins become distended, and relieve themselves by an effusion of serum into those parts which offer the least resistance, and where there is most cellular tissue—viz., about the ankles, from which point the effusion spreads upwards.

Amongst the later and sometimes earlier sequelæ of this disease we have hæmoptysis, arising from the congestion; in some cases emphysema pulmonum occurs.

Effusion may take place into one or both pleuræ, and into the pericardium, whereby the dyspnœa and danger are both much increased. In the head, we may have apoplexy or paralysis from venous congestion, and effusion or extravasation may be found post-mortem; and as the venous blood is often not returned from the medulla spinalis, we may see various signs of spinal irritation, or of failure of the spinal functions, which signs may, through the reflex function, cause some mystification.

The kidneys also suffer; for as the renal veins enter the vena cava at an obtuse angle, they are subjected to the pressure of the delayed blood in that vein, and thus they cannot relieve the kidneys by emptying themselves; effusion into the renal pelvis takes place, the urine becomes charged with albumen, or with components of the blood itself; it becomes scanty, high-coloured, and loaded with deposit, and renal disease is added to the list of evils, soon exciting diseased action in the brain, if it have not occurred before, and causing, more or less speedily, a fatal issue. These are the chief results, and this is the progress, of insufficiency of the mitral valve.

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29. *Case of Congenital Cyanosis of forty years' standing, depending upon Patulous Foramen Ovale and Obstruction in the Pulmonary Artery.* By ROBERT J. SPITTA, M.B., Lond., (Proceedings of *Med. and Chirurg. Soc.*, Jan. 13, 1846.)—The patient in this case, was a lady, aged forty, of diminutive stature, and pigeon-breasted, but without any positive deformity. She had cyanosis from birth, indicated by blueness of the cheeks, lip and tongue. The heart's action was said to have been regular when at rest, but sudden exertion produced palpitation and dyspnœa. She suffered very much from cold. In March, 1845, she was suddenly seized (while at rest) with dyspnœa and partial syncope, accompanied by convulsions, and afterwards, with intense pain, referred to the epigastrium, loins, and hypochondria. This condition lasted twenty-four hours, when she died. The patient had previously suffered from four serious attacks of a similar nature—in 1840, in May and September, 1844, and in February, 1845, six weeks before her death. In November, 1843, she had also anasarca of the abdomen and lower extremities, from which she completely recovered, and never afterwards became dropsical.

The author having only seen the patient casually, was unable to give any accurate information respecting the sounds of the heart. She had never suffered from rheumatism.

The following are the post-mortem appearances observed about the heart:—The organ was heavy and firm, and somewhat enlarged. The hypertrophy was chiefly on the right side, the right ventricle being as thick as the left, and the right auricle three times as thick as the left auricle. The foramen ovale was patulous—the opening about four lines in diameter. The auriculo-ventricular valves were thickened, but movable: the aortic valves healthy. Above the semilunar valves of the pulmonary artery an adventitious membrane was stretched completely across; it was a line in thickness, and perforated in its centre, not by a circular foramen, but by a mere slit, with margins of a red colour, and fringed with fibrin of the blood. The three semilunar valves were thrown up, as they are naturally, during the systole of the heart, and fixed in that position by the adhesion of (what would have been) their free borders to the adventitious membrane.

The author concludes with the following deductions:—

1. From the presence of cyanosis immediately after birth, and the absence of

rheumatism during life, the adventitious membrane was a congenital malformation.

2. That the hypertrophy of the right side of the heart was the consequence of the obstruction in the pulmonary artery.

3. That as either an obstructed pulmonary artery, or a patulous foramen ovale, may exist separately without the blue disease, the cyanosis in this case was the result of the two lesions combined.

4. That the circulation of imperfectly oxygenated blood impaired no function so much as the formation of animal heat.—*Lond. Med. Gaz.*, Feb. 13.

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30. *Ammonia in Asthma.*—M. Guerard has employed ammonia, Dr. Rogetta states, (*Annales de Thérap.*, Nov., 1845,) in a hundred cases of asthma, and generally with a favourable result. In some, indeed, its effects were truly marvelous, the paroxysm disappearing as if by enchantment. We lately saw in his wards an old woman, aged 60, who on admission was literally suffocating, the respiration being nearly suspended, in consequence of extensive pulmonary emphysema; the paroxysms recurred with extreme violence; but these disappeared after a single application of ammonia to the throat, a month ago. At the present time this woman is tolerably well (*assez bien*), she sleeps quietly, her respiration is free, and her physiognomy tolerably calm; she merely complains of an uneasy feeling in the throat, caused by relaxation of the uvula, which is resting on the base of the tongue.

M. G. applies the remedy in the following manner:—He dips a small pencil of charpie into pure liquid ammonia, and then instantaneously into a glass of water, after which he immediately passes it to the back of the throat, touching rapidly the velum, uvula, and œsophagus to a greater or less extent. He seldom has occasion to repeat the operation; when there is merely simple emphysema the improvement has been permanent. The pencil should neither be carried too deeply into the throat, nor allowed to remain too long in contact with the soft parts, more especially the posterior wall of the pharynx; the reaction resulting from such an application is, at times, followed by the most frightful symptoms, menacing instant death. The last case we witnessed at *La Charité* was that of a young man, hemiplegic, aphonious, and previously epileptic; the pencil was carried deeply into the pharynx, and maintained there a considerable time. The most horrible convulsions immediately ensued, and for a time it was feared he would sink. Fortunately the symptoms abated. In another case, recourse was nearly had to tracheotomy. By this mode of operating, the ammonia, exhaled in too great abundance, from the heat of the parts, acts too powerfully on the glottis, causing it to contract spasmodically, and the patient is threatened with asphyxia. It is well known, moreover, that cases have occurred, in which death has ensued from the presence of ammonia diffused through the air. Percy relates a case in which the son of a chemist thus perished,—he had immediate assistance, but fell a victim to the bursting of a bottle filled with ammonia. A similar case has been given by Merat and Delens. The importance of circumspection in the use of the remedy is the more necessary, as the benefits resulting from it are neither to be attributed to its cauterizing or revulsive effects upon the œsophagus, as has been imagined, nor yet to any nervous action; were this the case, any other cautery or irritating substance applied to the same spot would produce the same, if not more powerful effects, for the cauterization of the throat by the diluted ammonia is but slight. We shall see by and by that its action on the diseased organ is of a purely dynamic nature. But before proceeding further, we may inquire i this mode of treatment, so much vaunted of late in Paris, is really new. We have no hesitation in stating that it has been taken from the work of M. Giaccomini, who is the only one, so far as we know, who has recommended the use of ammonia as a curative means in cases of asthma and catarrh. Three questions naturally arise from the preceding facts, 1st. In what cases of asthma may ammonia be prescribed with advantage, and in what cases is it hurtful, or of no use at all? 2. What is the true principle of action of the remedy in such cases and, 3d. Is it indispensable to apply the ammonia to the throat in order to obtain its good effects?

From daily observation, it is evident that asthma frequently occurs in a state of complication with organic lesions of the heart and aorta, or with tubercles; at other times it exists without these complications, although otherwise accompanied with emphysema or catarrh. In the latter case, the disease may be denominated simple, the catarrh and emphysema being regarded as symptoms of the affection. From what we have observed at *La Charité*, it appears, that it is only in cases of the latter description, that is to say simple asthma (idiopathic of authors), that ammonia effects a cure, or affords great relief.

In regard to the second question, as previously remarked, we can only regard the result produced by the ammonia, as a dynamic effect acting immediately on the diseased organ, an action analogous to that obtained by Scarpa from the same remedy, in congestive amaurosis. And the proof that its action is dynamic, and neither mechanical nor nervous, is just this, that if any other irritating remedy, the actual cautery, for instance, boiling alcohol, tincture of canella, or cloth steeped in hot wine, the same results will not be obtained; far from that, the disease will be aggravated. Two things, moreover, must be considered regarding the medication in question, and these are,—its physico-chemical and local action, which is evidently irritant, and its dynamic action, resulting from the speedy absorption of the ammonia by the bronchia, which it reaches with the air. The first of these is unimportant in a therapeutic point of view; it is inconvenient, and would certainly be hurtful, were it not counteracted by the dynamic action, affecting not only the lungs, but the whole system. What, then, is the nature of the dynamic action of the ammonia? From the effects we have witnessed in asthma and congestive amaurosis, we have no doubt that it is hyposthenic. In one or other case you have a humoral evacuation, (mucus, tears,) and afterwards, results similar to those produced by other hyposthenic remedies. If, instead of ammonia, boiling alcohol be used, you will likewise have humoral evacuation, but the disease is increased. From what has been said then, it follows, that the direct application of the ammonia to the pharynx is not indispensably necessary, in order to obtain all the good expected from it in asthma, its absorption by the stomach will lead to the same results, if it be administered in sufficient doses. M. Rayer has already obtained good effects from it in this way, but the dose being too small, they have not been permanent. The remedy must therefore be given in sufficient quantity, through other absorbing media, not excluding the respiratory organs themselves, by placing a phial filled with the medicine near the nostrils, or disseminating it through the air; the rectum, skin, and stomach, may conjointly be made the means of repeatedly administering the remedy. It is well known, for instance, that belladonna applied to the neighbourhood of the orbit causes dilatation of the pupil, produces its hyposthenic effect upon the globe of the eye and the brain, exactly in the same way as if it had been administered by the rectum, stomach, friction over the extremities, or injected into the bronchia. Ammonia forms no exception to this general law of effects produced by absorption.

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31. *Hydrocele or Serous Cyst in the Rectus Abdominalis.*—Dr. Mayne exhibited to the Pathological Society of Dublin, (Dec. 6th, 1845,) a specimen illustrative of the difficulty which sometimes occurs in the diagnosis of abdominal tumours.

The subject of the case was a man aged 55 or 56 years, an occasional inmate of the South Dublin Union Poor House. He had been liable to attacks of severe bronchitis, for which he was in the habit of seeking admission into the poor house; and when relieved, he used to return to his occupation—that of a labourer.

About three months since, this man applied to Dr. Mayne on account of a new complaint, namely, a frequent desire to discharge the contents of his bladder, which, if not immediately satisfied, caused his urine to pass from him involuntarily. He could retain a moderate quantity without inconvenience, but whenever a certain degree of distension of the bladder took place, an urgent call to evacuate the urine immediately followed. He also directed Dr. Mayne's attention to a tumour in his abdomen, to which he attributed these symptoms. This tumour was seated above the pubis, on the right side of the linea alba, in the track of the right rectus abdominis muscle. It was of an oval shape, about the size of a goose-egg, perfectly uniform on the surface, and yielded an obscure sense of deep fluctuation. There was a very strong impulse communicated to it whenever the patient coughed. It was not in the slightest degree tender upon pressure, but by compressing it, the inclination to pass water was strongly excited.

At first Dr. Mayne thought it might be a sacculus connected with the bladder, consequent on some disease of the urinary passages, but a full-sized silver catheter passed along the urethra without difficulty, showing that there was no stricture nor any disease of the prostate gland. The urine drawn off was perfectly healthy, from which a sound condition of the mucous coat of the bladder was inferred; and the evacuation of this viscus had no effect whatever in diminishing the bulk or tension of the abdominal tumour, which rendered it unlikely that any communication could subsist between the tumour and the bladder.

Dr. Mayne was led to regard it as a chronic abscess, and the treatment was regulated accordingly; blisters, iodine, etc., were prescribed with little benefit.

After some time, the patient left the poor house, but he returned lately labouring under typhoid pneumonia. He was in a state of profound prostration, with extreme dyspnœa, some anasarca, and general dulness over the whole of one lung posteriorly. He soon sank.

At the autopsy, Dr. Mayne was particularly anxious to ascertain the nature of the tumour,—it was now before the society. They might perceive that it was a hydrocele placed at the back of the right rectus muscle. In this situation the posterior lamina of the sheath of the muscle is deficient, so that the tumour rested upon the peritoneum.

The experiment of inflating the bladder was made before the society, and as it became distended, the superior fundus was observed to come fairly into contact with the tumour. The same occurrence must have taken place during the patient's lifetime, whenever the bladder was dilated, and the pressure in this manner exercised upon it renders a satisfactory explanation of the urinary symptoms under which he laboured.

Dr. Mayne thought it probable that any attempt at a radical cure (supposing the diagnosis to have been made) would have induced a fatal peritonitis.—*Dublin Hospital Gaz.*, Jan. 1st, 1846.

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

32. *On Displacement of the lower fragment in fracture of the Surgical Neck of the Humerus.* By M. Debrou.—As fracture of the surgical neck of the humerus is commonly occasioned by direct violence acting on the posterior part of the shoulder or on the upper and outer part of the arm, M. Debrou thinks that the fracture is usually directed obliquely from above downwards, and from within outwards, or from before backwards. In 1843 he saw three cases of this fracture at the Hôtel Dieu of Orleans, in which the obliquity was in this direction, and in those three cases there was considerable prominence of the lower fragment, which was drawn upwards and carried inwards and forwards. When the extremity of the lower fragment is drawn in this direction it encounters a smaller thickness of soft parts than if it were displaced externally, and may come in immediate contact with or even run the risk of perforating the skin. In the three cases above referred to, the extremity of the bone partially (but not completely) perforated the skin, and thence carried the integument backwards with it on the slightest motion of the elbow and of the inferior fragment; from this there resulted a depression of the skin, which became deeper the further the lower fragment was carried backward. In one of these cases the lower fragment was so firmly engaged in the skin that perfect reduction could not be effected until the bone was freed from the skin by means of a subcutaneous section with a tenotome introduced two inches from the site of fracture.—*Dub. Med. Press*, from *Journal de Chirurgie.*

33. *On a new variety of Dislocation of the Humerus.*—By Prof. Roser, of Taubingen The Professor discovered in a subject intended for dissection at the University of Taubingen, a variety of dislocation of the humerus not hitherto described by

any author. The head of the humerus lay in front of the short head of the biceps; the sub-scapular muscle was ruptured and completely detached from the lesser tuberosity of the humerus, and the head of the bone elevated the scapular extremity of the pectoralis minor. In ordinary dislocations of the shoulder, the upper extremity of the humerus lies immediately on the outer border of the scapula; in this dislocation it is separated from it by the biceps and the coraco-brachialis whose tendons pass behind instead of in front of the humerus. On a careful examination the following dispositions were observed.

The dislocated limb was abducted and slightly everted, the head of the humerus touching the inferior border of the coracoid process. Intimate adhesions existed between the muscles of the shoulder and the ligamentous apparatus of the joint. The brachial plexus was surrounded by a very dense cellular tissue. The sub-scapular muscle, detached from the lesser tuberosity of the humerus, terminated in a bulbous mass which rested on the neck of the scapula, and involved the musculo-cutaneous nerve. The head of the humerus lay in a capsule of new formation below and internal to the coracoid process, was tolerably movable, and the pectoralis minor was expanded over it, adhering very firmly to its capsule. The tendons of the coraco-brachialis and short head of the biceps descend behind the head of the humerus involved in the capsule. The long head of the biceps was entirely displaced from its groove, described a curve round the head of the humerus, and was completely adherent to and confounded at its insertion with the fibrous tissue which filled the glenoid process.

The subject of this observation had fallen seven years previously while carrying a heavy load up a hill. The first attempts at reduction were made by some wood-cutters who came to his assistance. Several surgeons to whom he applied on the following day were equally unsuccessful. Very forcible tractions and several methods, including that of De la Mothe, were tried, but every time that the head of the bone was thought to be reduced it was found to be still displaced. The patient regained tolerable use of the limb, being able to dig and thrash, but could not put his coat on the left arm. He often experienced pain and a sense of numbness in the fingers.

Professor Roser easily produced this species of dislocation on the dead body, by cutting the tendon of the sub-scapular muscle, displacing the long tendon of the biceps from its groove, and then forcing the head of the humerus downwards. But what (he asks) was the obstacle to reduction? It was not, he thinks, muscular action, but the interposition of the short head of the biceps between the head of the humerus and the glenoid cavity. To reduce this dislocation, the same principle should be adopted that is followed in other reductions—viz., to cause the head of the bone in re-entering to follow the course it took in its exit, and as while being displaced it probably sustained violent torsion outwards, during reduction it should be forcibly rotated inwards, so as to slide over or else displace the interposed soft parts.—*Gaz. Med. de Paris* from *Archiv. für Physiol. Heilk. Von Roser.*

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34. *Vagino-labial Hernia.*—Prof. Stoltz had occasion to examine a pregnant woman, who, whilst coughing at stool, suddenly felt a large swelling make its ppearance in the right labium. The tumour diminished when the patient lay lown, but became painful and very large when she stood, or was engaged n fatiguing occupations. The tumour disappeared completely under compression, ut reappeared on coughing. These characters enabled it to be recognized as a ernia, but M. Stoltz ascertained it was not an inguinal one, for the hand pressed ver the inguinal canal and aperture did not prevent the hernia from descending nto the labium. It was remarkable that in this case the hernia did not return fter delivery.

In commenting on this case, M. Stoltz confirms the propriety of Sir A. Cooper's aming this form of hernia pudendal hernia; and he considers it to be quite disinct from perineal hernia, with which it might be confounded. The much greater readth of the perineum in women favours the occurrence of hernia in them. ut the broad ligament of the uterus divides the pelvis into two portions, a posteior and an anterior. If a loop of intestine descends in front of this broad liganent along the side of the vagina, and if it pushes before it or separates the fibres of the *levator ani*, the hernia will occupy the labium and nowhere else. But if, on the other hand, the loop of intestine descends behind the broad ligament, it descends between the vagina and rectum, and shows itself in the perineal region near the margin of the anus. The hernia is then a perineal one.—*Ed. Med. and Surg. Journ.* from *Gaz. Méd. de Strasbourg*, Jan. 1845.

35. *Two Cases of Prolapsus of the Uterus cured by excision of a portion of the Vagina.* By M. Leloutre.—A married woman, 45 years of age, the mother of five children, suffered from *prolapsus uteri* brought on by a fall on the fundament. Pessaries gave intolerable pain, and for several months the woman was in a deplorable state. Between the thighs there was a tumour of a pyriform shape, 11 inches 9 lines in circumference, and 5 inches in height, composed of the uterus with a portion of the vagina. Three longitudinal portions of the mucous surface of the vagina, extending from the *os uteri* to the vulva were cut out, one on each side and one behind. The edges of the wounds were then cauterized and the uterus replaced in the vagina. No unfavourable symptoms followed. A month after cicatrization was complete, the vagina was considerably narrowed, and the uterus remained *in situ.* Forty-four days after the operation the patient got out of bed, and at the end of eighteen months the prolapsus had not returned.

The second case was a woman 50 years of age who had led an irregular life, and who had a complete prolapsus of the uterus with inflammation. After the inflammatory symptoms were subdued, four longitudinal portions of the mucous surface of the vagina were removed, and the wound treated as in the former case. On the fifty-fourth day the cure was complete, the uterus being retained in its proper situation. Two years after this woman died of an apoplectic attack, when the condition of the parts were examined. The vagina presented four grayish-coloured resistent lines corresponding to the incisions. The mucous membrane had acquired considerable hardness, especially that towards the orifice of the vagina, which had lost much of its ordinary dimensions. The uterus preserved its normal structure, but its volume was evidently much increased.—*Ed. Med. an Surg. Journ.*, July, 1846, from *Archives Gén. de Méd.*, Oct. 1845.

36. *Resection of the four external fifths of the Clavicle.* By M. Chaumet.—A girl, æt eighteen, was admitted in the Hôpital St. André, of Bordeaux, June 30, 1845 Nine months previously she experienced vague pains in the right clavicle. A tumour soon commenced which has attained the size of the shut hand; it is im movable, hard, mammillated, and occupies nearly the four external fifths of th clavicle: it is the seat of moderate pain, and does not impede the motions of th right arm, which is not, however, quite so strong as the opposite one. July 15t M. Chaumet laid the tumour bare by a semi-elliptical incision, convex anteriorl and inferiorly, which extended from within half an inch of the sterno-clavicular a ticulation to the summit of the acromion. After dissecting up the flap, a portion o which was removed, as its size would have interfered with coaptation of th parts after the removal of the tumour, a vertical incision was made at the stern extremity of the first along the inner border of the sterno-mastoid muscle. Th tumour was then detached from its connections without its being necessary to ti a single artery. The clavicle was now divided at its internal fourth with th chain-saw, and the coraco-clavicular ligaments being cut, the bone was remove Three points of suture were applied, and to diminish the extent of the cicatri the shoulder was approximated to the residue of the clavicle by a circular ba dage. Irrigation with cold water was commenced two hours after the operatio and continued till the tenth day. On the 54th day the remains of the clavicle we slightly elevated by the sterno-mastoid muscle. On the 70th day the girl returne home, enjoying slight motion of the arm.—*Gaz. Med. de Paris*, from *Journ. de Me de Bordeaux.*

37. *On Spermatic Discharges.*—The *London Medical Gazette* for May, 1845, co tains an interesting paper by Mr. B. Phillips, on this subject. The cases, remarks, which have come under his notice have left on his mind the impre sion, "that though great general depression, and much mental discomfort, are t common accompaniments of those discharges, the instances are unfrequent whe

permanent bodily or mental mischief results from them: still I have known cases in which the mind as well as the body have broken down under the complaint. Usually, however, the inconvenience is got the better of; and I think more commonly it is owing to effort on the part of the patient than to the skill of the attendant.

"Of the 109 cases to which I have alluded, 84 were under 22 years of age; 97 admitted that they had practised masturbation to a greater or less extent, and they referred their present distress to that practice. Every one, however, stoutly asserted that the habit had been discontinued—by some for a few months, by others for years—but in many cases I thought I saw reasons to doubt the correctness of the assertion. In two of the older cases, I am of opinion that irritation within the rectum was the exciting cause; in two instances abuse of sexual intercourse; in one, probably in two, stricture of the urethra; in four, the irritation consequent upon congenital phymosis. In the remaining cases I have no doubt that masturbation was practised, though it was strenuously denied.

"In 38 cases the patients were submitted to active treatment; caustic was applied upon the urethra. In 71 instances no medical treatment seemed to be necessary, except for the purpose of exercising some moral influence over the patient, and to gain time. They were advised in many instances to use a mixture of the tinct. ferri sesqui-chloridi, and tinct. lyttæ. In cases where the patient was reasonable, I tried to convince him that it was unnecessary to employ any medical treatment.

"Such is a statement of the general features of those 109 cases. I will now proceed to offer some remarks upon the ordinary characters presented in the cases which have come under my observations.

"Of the patients under 20, a considerable majority deny that they have ever attempted sexual intercourse, but their minds have evidently dwelt much on sexual matters. They complain of occasional emissions during the night, of which they are usually conscious for the most part; they occur during lascivious dreams, and in most cases not oftener, on an average, than once in four to seven days. In a great many cases, however, there is another symptom which they conceive to be much more serious—the escape of a drop or two of a viscid transparent fluid with the last drops of urine, either when simply emptying the bladder, or when at stool. This kind of loss very commonly produces severe mental depression, often amounting to absolute hypochondriacism. In most cases the patients' minds are alive to all the dreadful consequences of these symptoms, for they have usually devoured the contents of books written by the inventors of quack medicines, for the cure of sexual debility, who gain a disgraceful livelihood by pandering to the fears and fancies of young lads who suffer from these affections; and in most cases no reasoning will convince the sufferer that his worst fears will not be realized. And in these cases I have occasionally submitted them to treatment, more with a view to act upon their moral than their physical nature.

"In this class of cases the instances are few in which, if the practice of masturbation be discontinued, and the mind can be directed to other objects, all inconvenience is not in a moderate time dissipated. The difficulty I have experienced is to make the patient think so. My view of these cases is less gloomy than that of some persons who have written on the subject; they have been regarded as the most aggravated form of the malady. In ordinary cases I hold them to be the simplest, the most easily got rid of.

"The way in which I explain this kind of discharge is as follows. A large number of lads soon after puberty inflame their minds by reading lascivious books, from which they derive images of sexual pleasures. A large number, also, are early taught the practice of masturbation. Under both circumstances, the gratification derived by contemplating the image, on the one hand, and by the physical excitement, on the other, keeps up a constant irritation. The testicles, instead of enjoying moderate rest, are incessantly stimulated by the dream at night, the mental or physical stimulus during the day; the secretion is constant, the seminal vesicles are distended, and unless the ejaculation takes place with sufficient frequency to relieve them, the fluid must escape by some other means; and the pressure upon them during the efforts at stool, or in making water, squeezes out a certain quantity of the fluid by which they are distended, and it usually escapes with the last drops of urine.

"At one time I doubted whether this fluid were spermatic, it is usually so smooth, transparent, and homogeneous; but if it be examined under the microscope, spermatozoa can usually be observed in it. Its thin fluid character has induced some people to think that it was a depraved secretion, become watery by exhaustion of the secreting organ; and sometimes it may be so, but usually it is not so; for if a person who complains of the constant escape of the thinner fluid has an ejaculation, the fluid will be thick and grumous. It is therefore most probable, that the more fluid portion of the secretion which fills the seminal vesicles is most easily pressed out; and this is a reasonable explanation of this particular feature of seminal discharges.

"To cure this symptom, all that is necessary is to keep the testicle quiet, by substituting new images for the prurient fancies which have occupied the mind, and to empty the vesicles occasionally by sexual intercourse; and for this class of cases I think marriage is the best cure. It is true, it is not easy generally to make the persons who thus suffer think so; they believe that their sexual power is destroyed, and that intercourse must be impossible—that their impotence is complete; but spite of such impressions, I have never hesitated in such a case to recommend marriage as a cure. You may be met with the observation, that intercourse has been attempted, but that it had failed—the erection was insufficient, or the ejaculation premature. These things in no wise alter my opinion, because where a person casually attempts intercourse as a means of testing his powers, but with the impression strong on his mind that he shall fail, he does fail; and therefore I dissuade patients from having recourse to these tests. But if a man be married, he ultimately gets rid of that nervousness which may at first have rendered him powerless, and he ultimately succeeds; and a single success gets rid of the mental impression which prostrated his bodily powers.

"It is astonishing, in these cases, how powerful is the influence of the mind in destroying the virile power. I was consulted by a man upwards of 40 years of age, who was at the time apparently in the best health, but who for twenty years had scarcely had an erection during perfect consciousness, though the sexual organs were perfectly well developed, and natural. His own account was, that there was no want of erection before 20. To some extent he had practised masturbation, and emissions during lascivious dreams were not unfrequent. At that time he read Sauvages, where he found a passage containing, as he conceived, a statement that discharges occurring as his did lead to impotency. From that hour he has been practically impotent. On first waking in the morning there is almost always complete erection; but the moment consciousness is perfect all erection ceases, and does not occur again till the next morning.

"Supposing my view of such cases to be correct, it is clear that they would commonly right themselves; but so profound is the mental distress they occasion, so hopeless the condition of the mind, so complete the despair in many cases, that all reasoning is useless, and you are obliged to propose some plan of treatment; and the main point to be carried out is to convince the patient that matters will go right under the use of the remedy employed, but that many months are necessary for the purpose; and that even then, unless the habit of constantly looking for discharge, and dwelling upon the subject, be discontinued, it is very likely it will fail.

"In all cases, however, previous to recommending such a course, I am accustomed to pass a bougie along the canal once or twice, for the purpose of ascertaining whether or not it be in a natural state; because, if there be no increased sensibility in the vicinity of the verumontanum, my experience does not enable me to promise any very certain relief from the direct application of any agent. If there be much sensibility along the whole canal, and this is sometimes the case, it is often difficult to satisfy the mind as to the state of that particular portion of the canal. It then becomes necessary to pass a bougie more than once, to determine what we desire.

"Even in cases of this class, if there be very excited sensibility at the point in question, great good is usually derived from the use of caustic; and, indeed, there are few cases of sexual debility which are much improved by the use of caustic, unless such abnormal sensibility be present."

38. *New Method of applying Taxis.*—M. Grynfeltt proposes to effect the reduction of hernia by applying mechanical force to the contained viscera in order to drag the protruded intestine back into the abdomen, instead of adopting the usual proceeding of endeavouring to push it back through the opening at which it has made its exit.

The following is the description given by M. Grynfeltt of the manner in which he has applied his taxis, in the case of a female, who had suffered from a strangulated inguinal hernia for five days:—

"We flexed the thighs as much as possible on the pelvis, leaving room, however, to grasp the tumour easily. The loins, thorax, and head, were also bent forwards to the full extent, so that the whole body was, as it were, coiled up. The patient, being placed in this position, it is easily imagined, that complete relaxation of the abdominal parietes was produced. Next, with the fingers of the left hand, we seized the hernial tumour at its base, and compressed it slightly. At the same time, with the right hand, we brought the coverings of the abdomen as much towards the external inguinal aperture as was practicable, when, by a simultaneous movement with the fingers applied over the parts, we produced a traction on the hernial contents sufficient to bring them back into the interior of the abdominal cavity. At the first attempt we had the satisfaction of feeling under our left hand, which supported the hernial tumour, the movement of fecal matter, and of the gas contained in the protruded portion of the intestines; when, combining compression of the hernia with the traction of the intestines in the abdomen, we succeeded in the reduction in a few seconds."

"Our operative proceeding, then, consists in *drawing* back the protruded portion of intestine into the abdominal cavity, instead of trying to *push* it back."—*Monthly Journ. Med. Sci.*, from *Gaz. Med. de Paris*, May 30, 1846.

39. *Ligature to the common Basilic Vein.*—Walter Yates, Esq., records in the *Lancet* (July 4, 1846,) the following case, in which he applied a ligature to the common basilic vein, without a single outward symptom occurring.

Ann C——, aged thirty-three, a very stout person, was coming carelessly down stairs with a chamber-pot in her hand, and happening to tread on her dress, she fell all her length to the bottom; the chamber utensil was broken into very many fragments, from some of which she sustained a severe injury of the arm. She immediately got up, and found her dress to be almost completely besprinkled with blood; a stream of the same fluid was also flowing down her arm. Assistance happening most luckily to be at hand, her arm was bound tightly up with six or seven handkerchiefs. She considers the loss of blood in this short time to have been not less than two quarts.(?) She feels faint, is very pale, and dreadfully alarmed lest she shall lose her arm. Having at hand everything necessary for the purpose of effectually securing any vessel or vessels that might be wounded, I removed the handkerchiefs, immediately upon which a terrific gush of blood followed, which I was unable to arrest by the firmest pressure of a bandage, being obliged to have recourse to the tourniquet. Having thus temporarily prevented the hemorrhage, I then searched the wound—which was deep, and was directed horizontally across the front of the elbow-joint, the incision being about three inches in length. I discovered a large vessel, which I at first took to be the humeral artery, but which afterwards turned out to be the common basilic vein. The incision proceeding as it did through three-fourths of its caliber only, allowed the vessel to gape very considerably, hence the tremendous escape of blood. Without further loss of time I then passed a tenaculum through the vein, above the place where it was injured, and a second one through it below the same place, and directly divided the remaining portion of the tube, disconnecting very slightly, and with the point of the scalpel, the vein from its cellular investment both upwards and downwards, so as to admit of a ligature being placed around its two extremities without any stretching of its coats, or of the nervous filaments connected with the coats. This operation occasioned very acute pain, which abated, however, in the space of a few minutes. All danger from immediate hemorrhage being now at an end, I leisurely, but carefully, examined the wound, in order to ascertain the exact nature of the injury. There being no pulsation of either of the two ligatured ends of the vessel, I placed my finger in the wound, and felt distinctly the brachial artery pulsating directly under the finger, and immediately under the divided vein. It was this want of pulsation which at once led me to suppose that the humeral artery had escaped injury, and that the vessel injured was a large vein, that vein being, of course, the common basilic. The edges of the wound were brought together by a single suture, and by straps of adhesive plaster, a dossil of warm wetted lint being placed over all. The forearm, placed at right angles with the humerus, was then lightly bandaged with a roller thoroughly soaked in warm water, the whole limb being supported and kept in its position by a long pasteboard splint, nicely adapted to the occasion. She was put to bed, and kept on low diet; directions were given that the whole arm should be kept continually moist with warm water. She was placed under the action of a saline antimonial mixture, having first had a draught containing forty minims of the tincture of opium.

One ligature came away on the ninth day, and the second on the eleventh day; and the entire wound healed kindly in the short space of a fortnight.

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40. *Injurious effects of Pressure in the employment of the Taxis for the reduction of Hernia.*—P. P. TEALE, Esq., in his *Practical Treatise on Abdominal Hernia*, relates the following case, which is particularly interesting in connection with the elaborate and valuable paper by Dr. Blackman, in the original department of our present number on the reduction of strangulated hernia *en masse.*

A man, aged thirty-nine, was admitted into the Glasgow Infirmary, having had a reducible hernia for ten years, which had been strangulated ten hours. During this time a surgeon had made powerful and continued efforts to return the displaced parts, and on his admission into the hospital, the taxis was again rather forcibly employed. When the patient was seen by Dr. Macfarlane, he considered it improper to make any further attempts at reduction. The scrotum was much swollen and discoloured. When the sac was opened, not less than a pound and a-half of dark-coloured blood escaped, a considerable quantity of which was pressed from the depending part of the scrotum. The hernia consisted of a large part of omentum, which was covered with coagulated blood, and of nearly two feet of intestine. The omentum was bruised and lacerated, and the protruded gut was almost wholly separated from the mesentery; it contained several rents, which passed in a longitudinal direction, and into each of these openings two or three fingers could be introduced. Mr. King possesses the unpublished records of forty cases o strangulated hernia; eight of these proved fatal after reduction by the taxis; six from rupture of the intestines; one from peritonitis, and one from having been reduced in mass. Even in cases which recover it is not uncommon to find peritonitis of such intensity as to endanger life, following reduction by the taxis. The return of the hernia in mass whilst strictured by the neck of the sac is an acciden of a most formidable character, which occasionally, though rarely, results from manual pressure; this accident may occur even under the employment of such degree of pressure as the surgeon was justified in exercising.

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41. *Treatment of Panaris by Mercurial Ointment.*—Dr. MARTIN has published in th *Mémoirs de Méd. Militaire* a very valuable practical paper on this subject. Panari prevailed to a considerable extent among the soldiers of Dr. M.'s regiment in Spain in the year 1834, and the treatment adopted, narcotic and emollient applications general and local bleedings, incisions, &c., not having resulted satisfactorily, D M. resolved to give a fair trial to the use of mercurial ointment as recommende by M. Serres of Alais. He soon was satisfied not only of its efficacy but wa persuaded that it is almost a specific in these inflammatory affections. The firs case in which he used it, was the following:—

A soldier presented himself at visit on the 15th March with a swelling, of fo days' standing, on the palmar surface of the right hand, which had originate without any known cause. The pain experienced in it was intolerable, conti uous, and pulsative; the skin was hot, red, and very sensible to pressure. A the symptoms appeared to indicate its termination in suppuration. M. Marti prescribed mercurial frictions, according to the method of M. Serres; the pain soon began to abate, the patient was able to sleep, and the signs of reaction diminished. After six days' use of the frictions, the inflammation had entirely disappeared.

M. Martin, after satisfying himself of the efficacy of this mode of treatment in several similar cases, thought that by using the friction more frequently, and afterwards covering the part with a poultice, he would still more increase the tendency to resolution; he did so accordingly, and found the results more favourable and speedy. In this way he effected a cure in several very aggravated cases. The following summary appended by the author to the end of his paper, will best exhibit the value of this mode of treatment.

In 1834, M. Martin had fifty-three cases under his care. All the resources of the art, with the exception of mercurial frictions, were tried. Of the fifty-three cases, forty terminated in suppuration, three in gangrene, three in caries of the phalanx, and in seven permanent stiffness of the affected part ensued.

In the following year he had forty-eight cases. Mercurial frictions were employed, and there was a marked difference in the results; twenty-seven cases terminated in resolution, and twenty-one only in suppuration. In none of them was there gangrene, loss of the phalanx, or stiffness of the joints. The period of treatment, moreover, was much shorter.

It may be added that during the two latter months of the year, when M. M. commenced to employ the frictions at shorter intervals, and covering the part with a poultice, the success was much more marked than in the previous months.

The modification of M. Serres' method by M. Martin is the following:—Instead of having recourse to the mercurial inunctions every three-quarters of an hour, and with a small quantity of the ointment, as advised by M. Serres, M. Martin recommends them to be made for five minutes at a time, and with the same interval, to be continued for two hours night and morning, and during the interval the affected part to be covered with a poultice.

By the use of these means, to the exclusion of almost all others, M. Martin has obtained this remarkable success. He does not hesitate to say he considers mercurial frictions specific in this painful affection.—*Monthly Journ. Med. Sci.*, June, 1846.

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42. *Hydrocephalus—Tapping—Cure.*—Dr. James Edward relates in the *Monthly Journal of Med. Sci.*, an interesting case of chronic hydrocephalus in a child eight months of age in which he resorted to tapping. The child when seen By Dr. E. was fretful and feverish, leaning his head alternately on his mother's arm and breast, with small irregular pulse. In the course of Dr. E's. attendance the child was alternately affected with diarrhœa and constipation of the bowels, the tongue being sometimes clean and at others foul; the face had generally a hectic appearance; the skin was occasionally hot and dry.

Dr. E. scarified the gums, applied a leech to each temple, and had him occasionally bathed to the middle in warm water. The bowels were rectified as occasion required by aperients or astringents. Cold applications were occasionally applied to the head when it felt very warm, but were discontinued when the temperature was reduced. Blisters were applied to the nape of the neck successively for a considerable time, and latterly these were replaced by a liniment of croton oil rubbed over the head and neck, which produced an eruption on the latter, but only an erysipelatous blush over the former.

Notwithstanding the continuance of this treatment during a period of six months, the disease gradually gained ground. Convulsions and squinting made their appearance, and Dr. E. considered that tapping for the evacuation of the effused fluid afforded the only chance of recovery.

The operation was accordingly determined on and performed in the following manner:—The child was placed across the knee of an assistant with his head towards Dr. E. The latter then applied loosely a starched bandage, the ends of which were given to another assistant that he might tighten it as the fluid was being evacuated. Dr. E. then introduced a common hydrocele trocar and canula a little to the right of the lateral angle of the anterior fontanelle, to the depth of about an inch in the direction of the right lateral ventricle. Having withdrawn the trocar, a reddish fluid was allowed to flow to the amount of ℥viij, when Dr. E. withdrew the canula, applied a compress on the wound, and tightened the bandage for the thorough support of the cranial bones. A slight oozing of blood took place from the nostril and continued for twenty-four hours: whether from an accidental wound of any small vessel within the cranium, in the course of the operation, Dr. E. is unable to say.

Nourishing diet was ordered; aperient medicine when necessary; and the body to be kept comfortably warm. All the former symptoms gradually disappeared; the child recovered his health, and now, after a lapse of seven years, is a fair scholar, and has every faculty good. He appears, however, to be increasing in height more slowly than is usual at his age.

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43. *Treatment of Wounds of the Arteries of the Superior Extremity by compression and forcible flexion of the forearm.* By M. J. Fleury.—When the forearm is strongly flexed, the pulse, as remarked by Bichat, ceases at the wrist, and Malgaigne, availing himself of this fact, tested the effects of a forced flexion of the arm in a wound of the brachial artery in 1832; he was at that time satisfied also that a strong flexion of the knee would equally arrest the pulsations in the artery of the foot, and consequently in all the arteries of the leg.

M. Fleury has made a successful application of these data in two cases, the one a complete transverse section of the brachial artery at the fold of the arm, the other a complete section of the radial artery.

A man named Nicolini met with a severe injury from the bursting of a cannon. The thumb of the right hand was stretched out (allongé) and in part buried in a deep wound, about three centimeters wide, in the anterior and inferior part of the left arm in an oblique direction downwards and outwards. Compression in the wound itself prevented the spouting of the blood, which, however, continued to flow in torrents. The moment the compression was removed, pure arterial blood escaped in a continuous and jerking stream. The inspection of the wound, its situation, direction, depth, with the colour and jerking of the blood, left no doubt as to the brachial artery being completely cut through transversely a little above its division into the radial and cubital arteries. The simple indication was to tie the two ends of the artery, but M. Fleury was prevented doing this by the arrival of several other wounded patients, and the operation was deferred, the wound being dressed as follows:

The brachial artery was compressed about its middle, the forearm flexed to 45°, bringing together the edges of the solution of the continuity, two diachylon bandages maintained them together, a large pledget of cerate placed transversely covered the wound, then two tents of charpie and two tight bandages fixed the whole.

A roller was applied from the fingers to the elbow, the forearm was then flexed as tightly as possible on the arm, the bandage was continued by figure of eight turns which extended to the middle of the arm. The compression being complete, the forearm strongly flexed on the arm, was immovable. Nicolini had received also a dangerous wound in the abdomen with extrusion of the intestines.

Examined some time afterwards, the bandages were scarcely tinged by a drop of blood, the compression was supportable and no inconvenience was observed respecting the apparatus. An attack of peritonitis supervened, from which he was soon convalescent. After the expiration of three days, the patient complaining that he suffered much from the arm being too tight, the bandages were cut behind, care being taken as to the position of the limb. It was bathed with cold water, and all the dressings which did not adhere to the wound were removed. New dressings were substituted, and the bandage replaced by one not quite so tight. On the seventh day the bandage was soaked, the charpie, imbued with pus of a good character, fell off, and the wound was seen almost with a complete cicatrix. The blood had resumed its course by the collateral vessels, the pulse was perceptible, but smaller than in the right arm, and the patient perfectly recovered.

In the second case a man received a transverse cut to the bone in the right hand, with a china plate; the blood gushed out instantly. The radial artery was cut completely through The artery was compressed and the limb washed; the edges of the solution of continuity were brought together by flexing the hand on the wrist, two small agglutinative bandages being applied. The wound was covered transversely with a pledget, and with dry charpie in large folds. A rounded form was given to the wrist by the application of graduated compresses dipped in cold water, and applied to the dorsal and palmar surfaces of the wrist and forearm; these were sustained by a long damp tight bandage. A roller was then applied, commencing at the fingers, and having reached the elbow, the forearm was flexed as tight as possible upon the arm, and the remainder of the bandage was employed in figure of eight turns, which rendered the forearm fixed and immobile. The whole of the dressing was bathed in cold water and the limb was placed in a scarf. The patient recovered without any untoward circumstance.

M. Fleury, after making several remarks, arrives at the following conclusions:

1. Forced flexion of the forearm, upon the arm, aided by a compressing bandage well applied, and by the limb being rendered immovable for a sufficient length of time, will suffice for the radical cure of any transverse and complete section of the inferior parts of the humeral artery, and of its terminal branches. By analogy, as much may be said respecting the terminal branches of the popliteal artery, since the forced flexion of the leg on the thigh suspends or relaxes the course of the arterial blood in the leg and foot.

2. Every incomplete division of the arteries may be cured in the same manner, but the chances of success would be less than when the vessel is completely divided. Accordingly, in many cases it might be necessary to imitate the practice of our predecessors, by completing the section of the vessl injured below the bend of the arm or the hand.

3. Any aneurism whatever of the arteries mentioned is curable by the same means. The ligature of the arteries therefore should be limited to certain rare cases, as an anchylosis, or fracture, or some other disease, which would prevent the forced flexion of the forearm or of the leg.

4. Lastly, these two cases prove in a decided manner that one can and ought to dispense, in certain cases, with tying an open artery in a recent wound.—*Ranking's Abstract*, vol. iii. From *Gaz. Med. de Montpellier.*

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44. *Œsophagotomy.*—This operation was performed with success by M. Delavacherie, Professor of Clinical Surgery at Liege. A man during a meal suddenly experienced a painful sensation in the region of the œsophagus, which he attributed to something having stuck there. This was soon followed by pain and great difficulty of deglutition. Emetics were employed unsuccessfully. At the termination of six days, and during forty-eight hours subsequent, he threw up at intervals large quantities of blood. A gum-elastic catheter was then passed, and confirmed the diagnosis of a foreign body being in the œsophagus. The catheter sometimes passed into the stomach without resistance, and sometimes met with an obstacle, in striking against which a noise was distinctly heard by the bystanders. Various instruments were employed for the purpose of withdrawing the foreign substance, or propelling it towards the stomach, but unsuccessfully, it was so impacted in the soft parts that violent efforts must have resulted in a rupture of the tube, and from the trials made it was doubtful whether it would be possible by any effort to displace it.

Long-continued sleeplessness, pain, anxiety, deprivation of food, and large losses of blood reduced the patient to a state of extreme debility, and his life was in imminent danger; œsophagotomy was accordingly performed by the method of M. Bégin.

The patient was laid on his back, the shoulders and chest being moderately elevated, and the head turned back and supported on pillows, so that the neck was inclined to the right. The operator placed himself on the left, and made from above downwards an incision through the skin, parallel to the trachea, reaching to about a finger's breadth above the sterno-clavicular articulation, below; and to the level of the superior edge of the thyroid cartilage, above. The muscles and cellular tissue were then successively divided, until the cellular space, between the trachea and œsophagus on the one hand, and the deep vessels and nerves of the neck on the other, were cleared. An assistant placed to the right of the patient during this dissection, drew the trachea and its dependences towards him, while the operator separated the external lip of the division with the ends of the three first fingers of the left hand introduced deep down to protect the vessels and nerves. In dividing the muscular fibres the wound was suddenly inundated with blood from the division of a transverse cervical vein, which had to be tied. The superior fasciculus of the omohyoid muscle had not to be cut. After separating that muscle, the bodies of the vertebræ were reached, but the œsophagus could not be distinguished either by the sight or by the touch. The catheter introduced into the tube did not project into the wound. The patient now swallowed a little water, when bullæ of air and a small quantity of water escaped at the bottom of the wound. The finger being placed over this spot, a hard very acute foreign substance was felt; this was fixed with a forceps to serve as a guide for the opening of the œsophagus, but before doing so, slight traction having been made to ascertain if the forceps held firmly, the foreign body escaped. On examining the neighbouring parts, the common carotid and internal jugular were contained in their sheath intact, but a branch of the superior thyroid artery had been divided. The foreign substance was a large piece of bone. Considerable fever and cough followed the operation, and the patient left the hospital on the twenty-sixth day after the operation, perfectly cured.—Ancel's *Report* in *Ranking's Abstract*, vol. iii.

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45. *Unusual Injury of the Elbow-Joint.*—Mr. R. W. Smith exhibited to the Dublin Pathological Society a preparation and cast of an injury of the elbow of a very unusual and rare description; it was taken from the body of a man æt. 46, who died of pulmonary disease, and who had met with the injury of the elbow several years before his decease; the forearm formed a right angle with the arm; it could not be flexed any further, nor could it be extended; the hand was fixed in a state of pronation, the power of supinating was almost completely lost: no motion whatever could be imparted to the ulna; it was in fact obvious that it was anchylosed to the humerus: the head of the radius formed a striking prominence, seen, (in the flexed position of the forearm,) below and behind the natural situation of the capitulum of the humerus; the olecranon process likewise, was placed behind and below the plane of the condyle of the humerus, but was by no means as prominent as in the ordinary case of luxation of both bones of the forearm backwards. Upon the inner side of the joint, three distinct osseous processes could be felt, placed upon the same vertical plane; two of them were constituted by the inner margins of the olecranon and coronoid processes; the third, (which was inferior,) corresponded to the inner condyle of the humerus; at the outer side of the joint, was also seen a remarkable projection, placed above the dislocated head of the radius, and reaching upwards about three inches along the outer margin of the arm. When it ceased, a great irregularity could be felt in the shaft of the humerus as if it had been the seat of an oblique fracture; from these characters it was conjectured that the injury had originally been a combination of fractured humerus, with luxation of the forearm at the elbow. Upon examination, *post mortem*, the following condition of parts was found. A fracture commencing about four inches above the outer condyle of the humerus, traversed the bone obliquely downwards and inwards, terminating about an inch above the inne condyle; this fracture had united with considerable deformity and overlapping the lower end of the upper fragment projecting forwards and inward: the uln was anchylosed at a right angle with the humerus, and somewhat displaced inwards: so that a line prolonged vertically downwards from the centre of the olecranon fossa of the humerus, would pass completely external to the olecranon, th inner margin of which was exactly in the same vertical plane as the inner condyle the head of the radius lay in the situation which it occupies in what is terme luxation backwards; it lay below and towards the posterior part of the outer condyle: the inferior surface of which, enlarged and flattened, presented a ver shallow socket for the displaced head of the radius: the capitulum of the humeru had altogether disappeared: a strong capsule surrounded the new radio-humera articulation, and from its inner surface was detached a bundle of ligamentou fibres, resembling the round ligament of the hip-joint. This new ligament wa

fixed in the depression which the head of the radius presents, and which was here much deeper than natural: the specimen then was an example of oblique fracture of the lower end of the humerus, with displacement of both bones of the forearm, inwards and slightly backwards, but, Mr. Smith remarked, it was involved in some obscurity, in consequence of the anchylosis of the ulna to the humerus; for anchylosis was not an usual result of accidental luxations, that have been left unreduced: in such cases the efforts of nature are rather directed towards the formation of a new articulation: so that in the absence of any of the commemorative circumstances of this case, the question naturally suggests itself, were the lesions of the humerus and of the elbow-joint, that had been described, the results of one and the same accident? or should the abnormal state of the elbow rather be considered as the result of chronic disease of the joint, occurring totally independent of, and at a period different from that at which the fracture of the humerus took place? Mr. Smith remarked that it would now be extremely difficult to arrive at a correct conclusion upon the question, but he was inclined to maintain the opinion, that the two lesions were coeval, and the results of one and the same accident; he had upon a former occasion exhibited to the society an example of an analogous injury, viz., fracture of the neck of the humerus with luxation of the head of the bone into the axilla; in all such cases the luxation remains unreduced, and the fracture unites with great deformity, as in the preparation on the table, for it almost amounts to an impossibility to reduce a luxation when either of the bones forming the joint have been fractured close to the articulation. With respect to the anchylosis between the ulna and the humerus, it may have been the result of a wound of the synovial sac of the articulation (by the pointed extremity of the upper fragment), whereby were induced synovitis, and ulceration of cartilage; this, however, was merely a conjecture. Such an occurrence is not unfrequently met with when the synovial sac of the knee-joint has been penetrated, in cases of fracture either of the femur or of the tibia. Mr. Smith in concluding alluded to a case described at page 465 of the edition of Sir A. Cooper's work, edited by Mr. Bransby Cooper, of an injury of the elbow-joint, analogous to that which he had just described.—*Dublin Hospital Gaz.*, Feb. 1, 1846.

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46. *Contracted Cicatrix from a Burn—Autoplastic operation—Considerable improvement.*—The *Provincial Med. and Surg. Journ.* for 27th May last, contains the following abstract of a case of contracted cixatrix from a burn, in which an autoplastic operation was performed by Mr. Carden, of Worcester. This case was originally published in the 12th vol. of the Transactions of the Provincial Med. and Surg. Association, and seems worthy of notice, as it is supposed to be the first case in which this particular method of operating was employed.

"Mary Ann Barnett, aged 14, was admitted into the Worcester Infirmary, September 9th, 1839, with contracted cicatrix after a burn, which had occurred seven years previously. The movements of the head were greatly restricted; the mouth remained permanently open, the tongue protruded, the lower incisors projected horizontally, and there was constant salivation. On attempting to raise the head, the eyelids were drawn considerably downwards. The patient, as well as her friends, being anxious to have something done for her relief, a consultation was held upon the case, and with the consent of his colleagues at the Infirmary, Mr. Carden performed the following operation:—

"The patient being placed on a well-cushioned table, with her head and shoulders somewhat elevated. the operation was commenced by carefully gathering up the cicatrix from below the left ear to the top of the sternum, between the fingers and the thumb of the left hand, which allowed of the whole of that side to be transfixed and divided at a stroke; the same was repeated on the right side, and a short cut over the top of the sternum connected the two incisions. In this manner the whole transverse extent of the cixatrix was rapidly divided, the wound terminating in sound skin on each side. The chin was then drawn upwards by an assistant, and every tense band of cicatrix successively divided by repeated strokes of the scalpel, until the head was released into nearly its natural position. By this mode of dissection, although nothing had been removed, the hiatus produced was very great, and extended from the chin and edge of the lower jaw to below the upper border of the sternum, exposing the greater part of both sterno-mastoid muscles, and external jugular and thyroid veins, the latter being particularly large and prominent. The quantity of blood lost was very trifling, scarcely requiring the torsion forceps. As soon as all bleeding had ceased, Mr. Carden proceeded to select a portion of sound skin on each side, about three inches long and two and a half wide; these were raised and detached, except at their junction with the outer edges of the wound, and brought together across the centre of the neck, and there united by hare-lip needles. The side wounds left by the flaps were then brought together, and the exposed parts covered with lint. The flaps were carefully supported by adhesive plaster, leaving apertures for the points of the needles, and the whole of the wound and surrounding integuments were well supported by long plasters and bandages.

The operation, which was severe and necessarily protracted, was borne with great fortitude, and without fainting. The needles were withdrawn two days after the operation; the dressings were not removed until the sixth day, when the flaps were found to have retained their position; but the upper border of each, being composed of old cicatrix, had perished, diminishing the breadth of each to less than two inches. The complete healing of the wound occupied nearly twelve months, during which time various contrivances were had recourse to for keeping the head in the erect position; but the bodily and mental suffering was so great, each time the wound was dressed, from these repeated stretchings, that they were altogether discontinued.

She was made out-patient in May, 1840, and in November following, presented the following appearances:—Wound healed; position and movements of the head greatly improved; can close the mouth, retain the saliva, and articulate distinctly; teeth regaining their natural position. A narrow cord has sprung up between the flaps, which threatens to draw down the centre of the lower lip, and also to prevent the further expansion of the flaps, which has hitherto been steadily going on and forming the most satisfactory feature of the case.

This band was divided by a curved bistoury, and pressure and further extension enjoined; but from that time she avoided attendance at the hospital, and neglected all directions. No more was seen of her until October 23d, 1843. She had then become stout in person; the teeth were quite upright; the flaps measured three inches on the right side, and two inches and three-quarters on the left, from above downwards; but there was an increased contraction in the central cord. This she consented to have divided and separated from the flaps, which would then, it was thought, be permanently united, and her appearance considerably improved.

OPHTHALMOLOGY.

47. *Successful case of the Employment of Iodine in removing Sparks of Iron from the Cornea.* By M. Reiniger.—A small particle of steel struck the eye of a cutler while at work, and fixed itself in the thickness of the cornea, from which it was found impossible to remove it either by the forceps or needle. It soon excited inflammation of the cornea, and after eight days the eye was still red, painful, hot, and the patient complained of a pricking sensation on its being moved. The fragment of steel could be distinctly seen, still retaining its polish. As a strong magnet also failed to remove it, it was resolved to have recourse to a chemical solvent, but one which would not act deleteriously on the eye. A weak solution of iodine and iodide of potassium was therefore used as a collyrium, and its very first application sensibly deadened the lustre of the spark of steel. By its continued use the steel was rendered soluble, and was gradually removed, when the sight was restored. The treatment was therefore most successful, and seemed to be preferable to that formerly recommended, viz. the employment of a dilute acetic acid, which is apt to impair the vision.—*Ed. Med. and Surg. Journ.*, July, 1846, from *Journal de Pharmacie*, June, 1845.

48. *Cases of Melanosis, with observations.* By Holmes Coote, Esq. (*Proceedings of Royal Med. Chirurg. Soc.*)—The author, after relating several cases of melanosis, gives a brief historical notice of the works in which a description of the disease

is contained. He then observes that "melanosis in the human subject occurs as a primary disease only in the eye and in the skin. In the horse it is seen chiefly about the anus, parotid gland, or spleen. Mr. Spooner, of the Royal Veterinary College, has never met with it but in horses of a light colour; most of them were becoming white from age." After some remarks upon the necessity of not confounding true melanotic tumors with other dark coloured swellings, the author gives a brief account of the chemical composition and microscopical anatomy of true melanosis. He argues from the latter, that melanotic tumours, though sparingly if at all supplied with blood-vessels, are not unorganized; the cells which compose them having their periods of growth, maturity and decline. He denies the correctness of regarding melanosis as a variety of cancer. He enumerates many points in which the two diseases essentially differ. Melanosis of the eye commences between the choroid and the retina; the tumour, pushing the contents of the globe on one side, makes its way externally by irregular periods of increase. Melanotic tumors of the skin are either cutaneous or subcutaneous.

The development of internal disease, to which the fatal termination of the case is owing, is marked by general lassitude, and undefined pains over the trunk and limbs. The patient is exhausted by sickness and diarrhœa, but in most cases retains his mental faculties to the last.

Secondary melanotic accumulations are found in all structures except the cornea, synovial membranes, tendons, and aponeurotic expansions. The liver often attains an enormous magnitude: in one case examined by Mr. Lawrence it weighed seventeen pounds and a half. From a table of fifteen accurately-watched cases, it would appear that the average duration of life after the removal of the primary disease by operation does not amount to more than thirteen months. The author concludes by endeavouring to show that the operation, though justifiable for the purpose of relieving a patient from a source of suffering, ought not to be held out as a means of eradicating the disease, or of materially prolonging life. He rests these conclusions very much upon examinations made by himself; having found by the aid of the microscope, that in one case melanotic matter existed in the blood-vessels, in apparently healthy muscles, nerves and other tissues immediately surrounding the primary tumour.

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49. *Entozoon in the chambers of the Eye.* By M. Alessi.—A magistrate, aged thirty, applied to M. Alessi, in the month of July, 1844, to consult him for keratitis, from which he had suffered for nine months, and to which chronic vascularity of the conjunctiva was added. The inflammation, which appeared and disappeared irregularly, had produced several nebulæ of the cornea, and a constant lachrymation and weakness of vision. This disease had been attributed to various causes by different practitioners, and had been submitted to various kinds of treatment. On examining the eye, M. Alessi recognized keratitis affecting all the layers of the cornea, together with slight muddiness of the aqueous humour. By continuing the examination with the aid of a lens, he saw a worm pass from the posterior into the anterior chamber. Seen with the naked eye, this worm appeared to be about two lines and a-half long. It was of a dirty white in its two inferior thirds, and fusiform; its superior third was of a milky colour. From the last portion four processes grew, one inferiorly, the shortest, one superiorly, the longest, and two laterally. M. Alessi gives no opinion whether this animal approached sufficiently near to cysticercus to pass under that name. It had, however, two opposite motions; when the superior appendages approached the inferior separated, and *vice versa.* It remained two or three minutes in the anterior chamber, and then retreated into the posterior, where it remained behind the lower edge of the iris for some time; returning into the anterior chamber, it lay against the outer edge of the iris. The chief cause of the ophthalmia having been thus discovered, M. Alessi was afraid to attempt to destroy the entozoon, according to M. Gescheit's plan, by exciting severe inflammation in the eye. In the present case inflammatory disease already existed, and its increase would not have been without danger. With regard to the extraction of the worm by an operation which had been done by Sœmmering, M. Alessi feared he would not be able to effect it in this case, on account of the free motion present. After having reflected on the indications which this rare case presented, M. Alessi determined first to combat a syphilitic

taint which existed in the patient's family. This was done by means of antisyphilitic treatment during forty days. M. Alessi then prescribed the application of three blisters, each two inches long by one wide. The first was placed over the eyebrow, the second on the temple near the orbit, and the third near the inferior border of the orbit. These blisters were dressed night and morning with an ointment containing equal quantities of calomel and santonine. The worm was, shortly after this treatment, deprived of all motion, and in less than forty days it was entirely absorbed. The keratitis and conjunctivitis of the eye of course soon disappeared, and the functions were completely restored.—*Med. Times*, June 27, 1846.

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50. *Amaurosis from Concussion of the Retina.—Recovery.*—W. B. Page, Esq., reports in the *Lancet*, (June 6th, 1846,) a very interesting case of amaurosis of the right eye, in a man 30 years of age, produced suddenly by a blow with the fist, on the organ. When admitted into the Cumberland Infirmary five weeks after the injury he was just able to distinguish night from day. The pupil was dilated and insensible. It was resolved to administer mercury until the system became slightly affected by it, and to keep up its effect for some time, and also to abstract blood occasionally by cupping, in such quantities, and at such intervals, as the state of the patient, and the benefits resulting from it, seemed to warrant; carrying it to such an extent as to relieve any local congestion, without materially lessening the powers of the patient.

Accordingly, on the following day, Dec. 18th, he was ordered to be cupped on the right temple to six ounces; to take five grains of blue pill three times a-day, and to be put on milk diet. The next day he stated that he could distinguish light from darkness more plainly than he had hitherto done, although he was still unable to point out in what part of the ward the windows were situated.

23d.—The breath has a slight mercurial fœtor. He is able to see the hand if held up between the eye and the light, and to count the number of fingers. Cupping to be repeated to eight ounces, behind the mastoid process.

25th.—The gums being slightly affected, the blue pill was ordered to be given only twice a-day.

30th.—The system being now evidently under the influence of mercury to as great an extent as appeared desirable, the blue pill was ordered to be given at night only. The sight has continued uninterruptedly and rapidly to improve, insomuch that he is able to distinguish one object from another, as a pencil-case from a pocket-knife. Ordered to be cupped to six ounces.

Jan. 4th.—Is able to read some large printed letters on a board in the ward, when held close to the eyes.

14th.—Can now make out the ordinary type of an octavo volume, although with some difficulty. Little obvious improvement now took place until the

26th—When he was ordered cupping to four ounces.

Feb. 3d.—The cupping having been apparently attended with much benefit, it was repeated.

12th.—Was again cupped. He was then able to read with comparative ease.

18th.—Discharged, being able to see perfectly.

A month afterwards this patient came to the hospital as desired; from the time he left he has been employed in ploughing. He can read the smallest type; in short, the sight of the eye is fully restored.

MIDWIFERY.

51. *On Incision of the Neck of the Uterus in cases where, from the contraction o the organ, delivery is difficult.* By Dr. Laborie.—The author commences his pape by stating, that whilst in many cases the progress of labour appears to procee naturally, the membranes having ruptured, and the pains succeeding each othe regularly, yet the os uteri does not dilate, and labour is indefinitely retarded. Th woman being otherwise well formed, it is evident the obstacle to delivery is to b sought for in the cervix, which being rigid, does not yield to the contractions c the body of the uterus itself. In general, simple means, such as bleeding, baths

emollient and narcotic injections, are found sufficient to overcome this state of rigidity. But in a certain number of cases these means are insufficient, the labour is lingering, and the life both of mother and child is in danger. It is in such cases that incision of the neck must be had recourse to, in order to induce dilatation, and this has now been so often performed, as to rank as a legitimate operation.

Three cases occurring in the practice of M. Dubois are detailed by M. Laborie; to one of these we invite the attention of our readers, as the operation was followed by a result not usually met with.

A young well-formed girl was admitted into the Clinical Hospital in the month of June, 1844. She had suffered from hemorrhage at various times during the course of her pregnancy. On the 6th the pains of labour commenced, and continued during the whole day. In the evening the membranes burst, the neck was thick and rigid, and the os uteri dilated to the extent of two centimetres.

On the morning of the 7th, a face presentation was recognized. The cervix was still rigid, but dilatation had advanced to the extent of three centimetres. Although the woman was much weakened, M. Dubois still deemed it prudent to allow things to take their course without interference. At half-past one, labour having made no advance, and the patient being much exhausted, incision of the cervix was then determined on. One incision made in the right side produced slight relaxation, but was followed by no other consequence worthy of remark. A second was immediately practised on the left side, but scarcely had it been done, when there ensued a copious hemorrhage of bright red blood. M. Dubois had immediate recourse to the forceps, but could not apply them owing to the rigid state of the cervix; he was equally unsuccessful with the lever. Injections of cold water were then had recourse to, but without effect in stopping the hemorrhage. The woman was now so exhausted that it was necessary to plug the vagina. The bleeding was thus stopped, but the patient continued in a state of extreme distress, and delirium supervened. Nevertheless the plug was removed in the course of half an hour; dilatation had now become sufficient, and labour was terminated by the forceps. All the unfavourable symptoms ceased, and the woman soon recovered.

M. L. remarks that cases of this kind are of rare occurrence, so much so, hat M. Dubois had never met with one similar. He conceives that it must have been owing to the placenta being inserted near the mouth of the uterus.

The following rules laid down by M. L. as to the mode of operating are so mportant, that we give them *verbatim*:—"We have seen," he says, "M. Dubois have recourse sometimes to the knife, sometimes to the scissors, in order to relieve the strictures at the mouth of the uterus. M. Danyau, on the other hand, nvariably uses the scissors. Should a preference be given to one or other of hese instruments, or may they be used indifferently?

"No decided answer can be given to the question, for either of them may be had recourse to according to circumstances, and according to the spot at which t is necessary to relieve the stricture. As a general rule, however, we should not hesitate to employ the bistoury, provided the cervix be not displaced; and we should choose that form of bistoury employed in removing the amygdalæ. When t is wished to practise an incision, either to the left, or anteriorly, or posteriorly, he index finger of the left hand must be introduced into the vagina, and its palmar surface applied to the spot where it is desired the incision should be made. The bistoury must then be introduced by means of the right hand, its flat surface liding along the surface of the index of the left, until its point, passing within he cervix, comes to be in contact with the end of the finger. By means of a emicircular motion, the cutting edge of the instrument must then be directed perpendicularly towards the free edge of the orifice; should the latter be tense, the ncision will be most readily executed, by giving to the instrument a sawing motion. We recommend all surgeons to limit the incision to the extent of a centimetre, conceiving it preferable to multiply them, should the desired result not be produced. If the incision be made to the right, the right hand must be used as he guide to the instrument.

"When the cervix lies far back, it is impossible to use the bistoury for the purpose of relieving its posterior lips; in such a case, recourse must be had to the scissors. The mode of operation is nearly the same; but in order to insure that the incision does not go beyond the extent of a centimetre, a most careful examination must be made by means of the finger. The scissors are also applicable in cases of retroversion, when the anterior hip has to be relieved, as well as for lateral incisions, in those cases in which the cervix lies very much to the right or left. It will be readily conceived, that in all such displacements, the most elevated edge of the orifice would be reached with difficulty by the bistoury, as its point would be in danger of coming in contact with the walls of the uterus, and wounding them. If the use of the scissors be entirely prohibited, a bistoury with a very convex cutting edge, must be made use of.

"The operator can, in general, immediately ascertain the effects of his incision; the cervix, from being hard and resisting, becomes more pliable. The influence of the operation should be particularly watched during a pain; it will then be found, that the head of the child, pressing strongly on the orifice, advances more perceptibly than before. The dilatation, in a quarter of an hour after the operation, is generally sufficient to permit of the application of the forceps, should it be thought desirable to terminate the labour in that way. But should this not be the case, new incisions must be had recourse to. M. Dubois affirms, that he has never failed in accomplishing his end by following these precepts.

"There is one counter-indication to the operation, which we wish particularly to specify, and that is, thickening of the cervix. When the latter has not become thin, the operation, instead of being of advantage, may be the very reverse. In this latter case, hemorrhage is most to be feared; but the incision over such an extended surface may also be the primary cause of laceration so extensive as to prove fatal.

"Attachment of the placenta, near the cervix, may, from what we have previously stated, be also held as a circumstance sufficiently serious to forbid the operation."—*Monthly Journ. Med. Sci.*, June, 1846, from *Encyclographie Méd.*, April, 1846.

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52. *Results of Auscultation at a Triple Birth.*—Prof. NAEGELE, Jr., has published the following interesting account of a case of triplets in the *Medicinische Annalen.* The woman was a primipara, aged thirty-two. At the moment when her labour commenced auscultation was used, and the double tick of a fœtal heart, with the simple *bruit de souffle* of a cord, was heard in the left hypogastric region. The same phenomena were present in the right hypogastric region, together with other double sounds. Two auscultators applied the stethoscope, one on the right, the other on the left side of the woman; they noticed that the fœtal pulsations were more frequent on the right side than on the left, in the proportion of thirty-eight to thirty-six, in the quarter of a minute. Soon after, when the right fœtus moved, forty pulsations in the quarter of a minute were counted for its heart, thirty-six for that of the fœtus on the left side, making thus a difference of sixteen pulsations in the minute between the two infants. After the birth of the first child with the aid of the forceps, the mother was examined again with the stethoscope, and the pulsations of two fœtal hearts were still heard distinctly, of which one was situated in the left hypochondrium, and the other in the right umbilical region. The head of the second child presented in the second position, and the pulsation heard to the right belonged to this child, which was also delivered by the forceps. After the birth of this child, the pulsation of a third fœtal heart was still heard distinctly, and this child was born by the unaided efforts of nature. The entire duration of the labour was fifty-seven hours. The first diagnosis given was, that there was more than one child in the uterus, and was founded on the distinct hearing the pulsation of two fœtal hearts. It was only by auscultating after the birth of the first child, when double pulsation was again heard clearly and distinctly, that it became possible to ascertain the existence of three infants. The pulsation of the third fœtal heart was not heard at the commencement of labour, because the infant was most likely situated behind the others towards the spine of the female. The uterine bruit de souffle was neither louder nor more extensive than usual, and could not cause the presence of the placentæ to be suspected.—*Med. Times*, Aug. 15, 1846.

53. *Fractured Sacrum impeding Labour—Delivery by Craniotomy in two successive labours.* By J. R. Gibson, Esq. (*Lancet*, June 13).—The subject of this case was thirty-six years of age, the mother of seven living children, whose previous labours had always been natural. She had been run over by a baggage wagon and sustained severe injury of the pelvis. Soon after her recovery she became pregnant and advanced to her full period. When seen by Mr. G., July 23d, she had been two days in labour. She had been bled and otherwise treated, but no advance had taken place in the progress of the labour, although the pains had been vigorous. Upon examination per vaginam Mr. G. found the liquor amnii had escaped: the head presented at the upper aperture of the pelvis, but no portion had entered the pelvis. The scalp was tumid; the os uteri dilated to nearly the full extent of the superior antero-posterior diameter of the pelvis, which could not be more than two inches and a half, as near as Mr. G. can judge.

The sacrum appeared to be that part of the pelvis which had sustained the chief injury, inasmuch as its promontory projected forward, and so much contracted its antero-posterior diameter. Upon examining externally, there was a deep depression, in which almost the two hands might be buried, corresponding to the sacrum. In this case there could be no doubt that one of two operations should be immediately performed—craniotomy, or the Cæsarian section; and as the latter operation must entail greater suffering, and far greater risk to the safety of the mother than the former, Mr. G. proceeded to deliver by perforating the head. This he did, not only "cautiously, but with great care," well breaking up the brain, particularly at its base. But in order to accomplish the extraction of the fœtal head, it was not only necessary to destroy the brain and evacuate it, but to remove the parietal and the greater portion of the occipital bones. The delivery was completed in about an hour and a half. Two grains of opium were given, and the case proceeded, with some slight uterine inflammation, which was readily overcome, to a favourable issue.

About five months after her recovery, she again became pregnant, but did not apply to Mr. G., or inform me of its occurrence, until within the ninth month of utero-gestation. At this late period, Mr. G. did not deem it advisable to induce labour, but to await the commencement of natural labour, which took place on Oct. 1, and proceeded slowly during the whole of that day. The os uteri being somewhat dilated and readily dilatable, without any advance, as in the preceding labour, Mr. G. considered it advisable to accomplish the delivery without further delay. The uterine efforts had been vigorous, although not very frequent, and the head seemed fully developed. The delivery was accomplished in the same manner as on the former occasion, and at this time she recovered without one unfavourable symptom.

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54. *Influence of Galvanism upon the action of the Uterus during Labour.* By J. Y. Simpson, M. D. (*Monthly Journal Med. Sci.*, July, 1846).—The employment of galvanism as a means of exciting or increasing uterine contractions seems to have been first suggested by Herder in 1803. It has since been proposed and employed by others with this view, but without any very striking results. The attention of the profession has recently been strongly drawn to this measure by the publication, in the *Provincial Med. and Surg. Journal* (Dec. 24, 1844), of a paper "on galvanism applied to the treatment of uterine hemorrhage" by Dr. Radford, in which this writer states that galvanism produces an effective and powerful contraction of the uterus. With a view of ascertaining the exact degree of influence which galvanism possesses over the contractile action of the uterus during labour, Prof. Simpson instituted a series of experiments, the details of which are given in this interesting paper, and which lead to results the very reverse of those which he expected.

Galvanism was employed in eight cases, and the results may be summarily stated as follows. Prof. S. says:

"In one instance the pains were more frequent in their recurrence, but shorter in their duration during the application of the galvanism. In five other cases, the employment of the galvanism neither increased the average frequency of the pains, nor their average duration. In one, the pains ceased whilst the galvanism was applied, and returned upon its removal. In the instance which I have last detailed, the uterine action ceased while the galvanism was applied, and did not return upon the withdrawal of the galvanic action, nor for twenty-four hours subsequently. There was no reason whatever at the time to expect this as a probable occurrence, independently of the galvanism. But even admitting, for the sake of argument, that the cessation of the uterine action was not the result of the galvanic influence used, still the fact is amply sufficient to show that the galvanic current had not, at least, the power either of increasing the pains, or even of continuing and maintaining them when they offered to fail. It may be proper to add, that during the galvanic action, in none of the experiments did Dr. Barry or I find, in the intervals between the *clonic* uterine contractions or pains, any evidence whatever of unusual *tonic* contraction of the uterus, as shown either by any degree of hardness in the general uterine tumour, or by any degree of tension in the pressure of the bag of membranes or the child's head against the cervix uteri.

"It would be hasty and logically incorrect to deduce from the preceding observations, that under no modification, and under no manner of application, doe galvanism possess the power of directly exciting or increasing the contractile action of the uterus. Forms or methods of employing it may yet possibly be detected or devised, affording a different result. But I believe I am justified in inferring from the preceding inquiry, that as employed at the present time, and in its present mode, it is not a means which can be in any degree relied upon fo the purpose in question; and is so far practically and entirely useless as a stimulant to the parturient action of the uterus."

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54. *On Thrombus of the Vulva.* By Prof. VELPEAU.—Thrombus of the vulva although mentioned by Kronauer (1734), by Levret, and since by Boer and Audibert, has been omitted in nearly all modern works on pathology and midwifery M. Deneux is the author who has given the best description of it.

Thrombus of the vulva may invade both sides of the vulva, but, generall speaking, it only occupies one of the labia majora, or a part of the interior of th vagina. It may be of the size of a walnut, of an egg, of the fist, or even of new-born child. Of a dark, black colour, it presents a globular, spheroidal, o elliptical form, protruding principally on the free surface of the labia or vagina.

These sanguineous tumours of the vulva are generally indolent and soft, an offer slight fluctuation at the most prominent part of their surface. The pubic o femoral side is, on the contrary, rather dense and resistant, fluctuation being obscure. On pressing the tumour between the finger, as if to strangulate it, or t draw it towards the exterior, it becomes at once evident that the mass is not connected with the pelvis, that it is entirely formed in the soft parts. When a tumou presenting the above characters has formed rapidly,—in the space of a few hour for instance,—the diagnosis is very easy. An abscess, a cyst, or any other tumou would develop itself in a very different manner, and present other anatomica characters.

The frequency of thrombus of the vulva is very great. I have myself see more than thirty cases. M. Deneux has collected about sixty in his essay. If th disease has been considered rare hitherto, it can only be because it has often bee confounded with diseases of another kind. Thus, Formi describes a case of thi malady as gangrene of the vulva. He says that a tumour appeared in the rig labium of a lady who had been wounded, and having been neglected for thre or four days, became gangrenous. He made a deep incision into the tumou and withdrew a pound and a half of blood, after which all healed.

The essay of M. Deneux would make it appear that thrombus of the labia is disease confined to lying-in women, or to women recently confined. Such, how ever, is not the case; women who are not married, and women who are not i the puerperal state, are often the subjects of these tumours. I have seen as man as six cases in the same year, in women who were not, and had never bee pregnant. I have seen a thrombus of the vulva in a young girl of fourteen, wh stated that she had been violated. I have also met with the disease in women eighteen, twenty, twenty-five, thirty, thirty-five, forty, fifty, and even sixty yea of age. De la Motte and other authors, during the last two centuries, have lik wise published cases in which thrombus of the vulva has occurred apart from the puerperal state.

Parturition is only one of the causes of thrombus of the vulva, which is merely the result of the laceration of some vessel or vessels, with or without a wound of the integuments. A collection of blood thus created, may take place at the vulva, as elsewhere, under the influence of all kinds of shocks, pressure, or mechanical violence. Thus it is that non-pregnant women may become affected with thrombus of the vulva from a fall on the angle of a chair, or of any article of furniture, from a kick, or from venereal excesses. This latter, indeed, is one of the most frequent causes of the lesion. The mechanism, in such cases, would be the same as in women in the puerperal state, in whom the tumour is generally occasioned by the passage of the head of the fœtus through the inferior brim of the pelvis. We must not, however, forget, that in pregnant women the pressure exercised by the uterus, or by some parts of the child, on the organs contained in the pelvis, or in the abdomen, must, by interfering with the return of the blood towards the centres, favour the dilatation of the vessels of the vulva, so as to render their laceration and the subsequent extravasation of blood more easy. In parturient females, the tumour acquires a much larger volume than in those who are not pregnant. Sometimes, also, a thrombus will appear, as it were spontaneously, in women in the puerperal state.

Once established, thrombus of the vulva may be assimilated in its symptoms and changes to sanguineous tumours in other parts of the body. It may undergo various transformations; either the effused blood disappears insensibly, and the disease terminates by resolution, or the fluid part alone of the collection is absorbed, and the coagulum which remains forms, in the course of time, a concrete tumour, the precise nature of which it is sometimes difficult to determine. In some cases it is the concrete part that disappears, whilst the fluid part remains, and increases in quantity. Thus is formed a cyst, filled with red pultaceous matter, with a greasy, semi-transparent substance, or with serum. Sometimes the tumour becomes inflamed, and is transformed into a true sanguineous abscess.

It is more especially in women who are not in the puerperal state that these different phases of the disease are seen, as the medical attendant is seldom consulted at the onset, from the dislike which women, so situated, feel to mention the nature of the disease under which they are labouring. At the epoch of parturition it is different; the tumour originates, as it were, under the eyes of the accoucheur, and when recognized, may be treated at once. Its existence is also more likely to be recognized in parturient women, as with them it is much more painful than with women who are not in that condition. In the course of a few days, the pain which the tumour may occasion, even when not inflamed, passes away, and it becomes indolent, and like any other form of hæmatocele. When the thrombus exists in the superior half of the labia, or near the pubis, it occasions less pain, and is less disposed to inflame, than when occupying the perinæal half of the vulva.

When a thrombus situated near the perinæum inflames and suppurates, the pus emitted, when it is opened, has a very fetid odour, which might lead to the supposition that the abscess communicated with the intestine, were it not borne in mind that all purulent collections contract easily the odour of the contents of the mucous canals in the vicinity of which they lie.

The prognostic of sanguineous tumour of the vulva is not very serious, although it may be rather more so than that of sanguineous tumours in general. The danger of this form of thrombus has been exaggerated; if death has followed its manifestation in some instances, it has been owing to excessive hemorrhage. Thus, Stendal gives a case in which seven pounds of blood escaped from the tumour. When the thrombus has had time to transform itself into a concrete tumour, or a pultaceous or serous cyst, the disease belongs to another class of tumours, and no longer forms a part of sanguineous tumours, properly so called.

The treatment of thrombus of the vulva varies according as the tumour is small or large, with or without solution of continuity of the skin, with or without thinning of the teguments, with or without inflammation. I need scarcely say that simple sanguineous infiltration of the labia does not demand any particular curative measure, and that it is dissipated by the same precautions, and by the same mechanism, as in ecchymoses, infiltration of blood of greater or less extent anc depth, in other regions of the body. Unless there be division of the integuments resolutive agents must be first resorted to, such as linen dipped in a solution o acetate of lead. If by the end of fifteen or twenty days the tumour has not become absorbed spontaneously, or under the influence of these means, other measures wil probably be necessary. When this is the case, the absorption of the effused fluic is probably prevented by a kind of cyst by which it is surrounded, which cys must be opened. This may be done in two ways,—by introducing a kind o lance into the tumour, cutting or tearing the parietes of the cyst with it, and then forcing, by pressure, the blood to infiltrate into the surrounding tissues, or by simply crushing the tumour. Crushing a thrombus of the vulva, with a view to disseminate its contents in the adjoining parts, becomes impossible, if the skin is broken or painful. When it can be effected, it is preferable to puncture, as the small wound thus occasioned may inflame, and be followed by suppuration of the thrombus.

In women in the puerperal state, the thrombus is generally too voluminous and, more especially, too painful, to admit of crushing, which is also often inapplicable under other circumstances. In such cases, and when the thrombus resists all resolutive treatment, the definitive remedy is incision of the tumour. The incision should be large, so as to allow of the thrombus being fairly emptied o the clots which it contains. The minute arteries which may be divided are too small, or too easy to tie or twist, to modify the practice of the surgeon. The cys having been freed from clots, should be washed, and then filled with small rolls of lint.

The region of the cyst in which the incision is performed is of importance When the thrombus is very thin and prominent in one part of its surface, anc appears likely to burst, the incision must be made on the most prominent spot otherwise it should be made as near the cutaneous edge of the labium as possible

When thrombus of the vulva occurs in pregnant women, it constitutes an obstacle to the exit of the child, and there is scarcely any way of avoiding an incision.—*Journal de Chirurgie.*

55. *Vomiting of Pregnant Women.*—Dr. Stackler has communicated to the Medical Society of the Bas Rhin two cases of obstinate vomiting in pregnan women, in which the symptoms yielded to the black oxide of mercury, given in the dose of five centigrammes (three-quarters of a grain), daily. There was no the least trace of salivation nor any other inconvenience after the use of this medicine. Dr. Jauger referred to cases of hysterical convulsions and vomitings sympathetic with the condition of the uterus, which had been cured by the black oxide of mercury. According to this physician the medicine is equally appropriate in irritated states of the organ, whether in pregnancy or otherwise. Should furthe experience confirm this property of the black oxide of mercury, its importance will be readily comprehended by those who recollect how extremely severe ar the obstinate vomitings with which females are occasionally attacked during gestation. Professor Forget took occasion of the communication of Dr. Stackler t quote the case of a woman who had been reduced to the last degree of emaciation by these nervous vomitings, and at length died during the sixth month c pregnancy.—*Prov. Med. and Surg. Journ.*, July 1, 1846, from *Gaz. Méd. de Stras bourg.*

56. *Pregnancy and Delivery during complete Prolapsus of the Uterus.*—In the "*Bul delle Sc. Med. di Bologna,*" is recorded the case of a female, who first suffere from prolapsus of the uterus in her 15th year; in her 22d year she became preg nant, and her pregnancy proceeded to the seventh month, without any particula inconvenience. In the seventh month the uterus began to sink, and in the com mencement of the eighth month it projected as much as six fingers' breadth be yond the vulva. The author was not called until the patient had been four day in labour. When he arrived he found the woman much exhausted, and the orgar of a dark-brown colour, hanging as low down as the middle third of the thigl Labour proceeded in the usual way; the child was extracted with forceps; an

on the twentieth day the woman was able to leave her bed.—ANCELL's *Report* in *Ranking's Abstract*, vol. iii.

57. *Imperfect condition of the Os Uteri, with Malformation of the Vagina—Treatment during Labour.*—Mr. S. H. DAVIS records, in the *London Med. Gaz.*, March 1846, a case, not of occlusion, but of an imperfect condition of the os uteri, with malformation of the vagina, producing difficult labour, for which it was deemed necessary to make an incision. On placing the patient on her back, separating the thighs, and opening the vagina with the fingers, the upper part was not more than two inches from the vulva, and a small aperture large enough to admit a crow's quill, having the appearance of a circular hole made with a punch, was seen, and through it the hairy scalp of the fœtus.

A director, bent at an obtuse angle, was introduced into the uterus, and passed directly backwards. in which direction an incision nearly an inch in length was made with a probe-pointed bistoury, a catheter having been introduced into the urethra; the cutting edge of the bistoury was turned forwards, and an incision made to the extent of a quarter of an inch. The structure divided was of a firm texture, a quarter of an inch in thickness.

About three hours after the operation the pains continued strong; the os uteri was dilated to the size of a crown-piece, the margin thin, and of a natural feel; but a longitudinal band, extending along the posterior wall, was still firm and resisting. Five hours and a half subsequently the pains continued very powerful, but symptoms of threatened exhaustion came on. The head was low down in the pelvis, the swollen scalp, in the form of a cone, pressing on the os uteri, which was much more dilated; but six distinct, firm, and unyielding bands were observed taking a short course from the vagina to the os uteri, as if formed by puckering of the vagina, one on each side of the urethra, two laterally and two posteriorly, much stronger than the others; the bands became very tense during a pain.

Each of these bands was divided, and a little additional room obtained, but still the head did not make progress during the very powerful pains, being obstructed partly by the approximation of the rami of the pubes, but chiefly by the malformation of the soft parts.

Dreading rupture of the uterus, and the patient being more exhausted, it was decided to open the cranium of the fœtus, and endeavour to deliver at once, which was easily effected without laceration or hemorrhage, the uterus contracting firmly, and the patient recovered without a bad symptom.

On examination after recovery, an inch within the vagina a distinct and firmly resisting ring was observed, and within this the os uteri flattened, not protruding into the vagina, and of an irregular form; from the left margin of the os uteri, extending between it and the ring, was a firm, thickened band, resembling somewhat the contracted cicatrix of a burn, and a second band took its course along the posterior wall of the vagina.—*Ibid.*

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

58. *Diseases of Workmen engaged in making Lucifer Matches.*—This subject has attracted a good deal of attention in Germany and France, and as we have in this country similar manufactories, it may be of some use to state what has been noticed concerning it.

An interesting communication was published in the Medical Gazette of Strasburg, in 1845, by Dr. STROHL. He states, that about a year previous, a female was received by him into the hospital, whose inferior maxillary bone was completely denuded of the soft parts, and its surface was grayish, rough, rugous, and covered with a fetid suppuration. She informed him that she had been for many years engaged in making chemical matches, and had thus contracted the disease. After remaining about a month, she left the Hospital, and died soon after.

Dr. Strohl could scarcely, from this solitary case, imagine any connection between the disease and its assigned cause, but in June, 1845, he was consulted by another female aged twenty-four years, in a similar condition. She had laboured during five years in the manufactory; her particular occupation being to dip the matches into the phosphoric mass. During all this period, she had experienced no inconvenience. She then left the establishment, to assume another occupation, which, however, it is added, was not laborious. In three months after leaving, she experienced violent pain in the right upper jaw, which was soon succeeded by swelling and abscess of the gums. Eight teeth in succession became rapidly carious, and were removed. This had some effect on the swelling, but it soon increased again, extending to the cheek and part of the neck. According to the patient's account, the suppuration at its commencement had a strong odour of phosphorus.

When first seen by Dr. S. she had been eighteen months away from the manufactory. Six weeks previous to this time, she had been brought to bed, but did not suckle the child. Pregnancy on the whole appeared to have proved favorable to the disease, but on new examination, there was found to be a necrosis of the superior maxillary. Various remedies were employed. Cod-liver oil was one of them, but she could not continue its use. Iodine internally and a solution of creasote for an injection, to the fistulous opening, with chloruret of lime, gargles, proved successful in arresting the progress of the disease, and restoring the parts to a healthy condition.

Two additional cases presented themselves to Dr. Strohl, in July of the same year. One, a female aged twenty-two, had been two years employed in the same manufactory as the preceding patient. Her health had continued good until the last two months. Then the gums began to soften and swell—violent pains in the teeth of the upper jaw followed, with swelling extending over the whole cheek. The teeth becoming carious, fell out, and a fetid suppuration proceeded from the sockets. On examination, the bone was found largely diseased.

In the other instance, a female also, aged twenty-two, had been employed six years. Her particular business was to make up parcels, but this was done in the same room where the matches were dipped. At first she experienced a defluxion from the nose, which soon became permanent. At the end of three years, her face began to swell and she then left the business. The swelling gradually increased, and she entered the hospital. Several teeth were extracted, with but little relief. She appears to have repeatedly left and returned to the hospital, with the swelling continuing, until at last an abscess formed in the superior maxillary bone, which left it carious.

In addition to these, Dr. S. also knew of three others. Death ensued in two instances, and the third was cured.

The information that he obtained was not very satisfactory. There were two manufactories of these matches; six of the diseased came from one and but a single person from the other. In the first, the work was for a long time done in a small chamber, but the persons employed are now transferred to a more spacious apartment. Few remain interruptedly in the business; they come and go for a longer or shorter interval. As the phosphoric emanations are very irritating, a great number are taken with cough, which sometimes is so severe as to oblige them to leave off work. Pain in the teeth and serous catarrhs are also common. Indeed, the above seven cases all commenced in this way, and it will be observed that in one instance the affection of the bone did not occur until a considerable time after leaving the establishment. The nature of this, it is difficul to characterize; it is not a simple caries, nor is it a simple necrosis; the sof parts detach themselves from the bone to a large extent and leave below a bony gray, rough, but solid surface, and a gray, fetid suppuration exhales. After an uncertain period, this separates, without any appearance of new bone being formed.

Dr. Strohl does not doubt the affinity between the employment and the disease produced. How else are we to explain the great similarity in the symptoms? I it be urged, that out of fifty workmen, only six have been attacked, he replie that all of these last have been long engaged in this occupation, while most o the others were so only temporarily. It is possible that the disease may stil break out in these. At least one of the patients informed him, that three other were now labouring under permanent fluxions, and she doubted not, but that they would be similarly attacked.

Dr. S. finds some difficulty in explaining the mode of action of these phosphoric vapours. The affection is purely local; no general symptom precedes it; no other part of the osseous system, except the mouth is attacked, and the general health is not affected, unless the suppuration be very profuse. In his opinion, the vapours of the phosphorus become changed, by contact with oxygen, into hypophosphoric acid, and this breathed in, is dissolved by the saliva, and becomes phosphoric acid. Again, this last acid is frequently produced by the combustion of the phosphorus, since it often happens that the vessels in which the masses of phosphorus are melted take fire, or again, the matches when prepared, will also frequently inflame.

This acid, then, when dissolved in the saliva, renders it corrosive, and as the saliva rests longest against the gums, these will be softened; they will imbibe the liquid acid, which in turn will attack the teeth, and, filtering down, at last reach their sockets. This explains also why the tongue is not affected, although the gums and cheeks are. The tissue of the tongue is probably more refractory; at all events, the saliva on that organ is more rapidly swallowed or rejected, than that at its sides or retained in the various cavities. Hence also the nasal cavities and the bronchial membranes are not affected. In the first, the acid meets only a small quantity of fluid, of a viscous nature with small dissolving power; in the bronchiæ, it is the same, and as the passage of vitiated air must be here very rapid, the solution will be small in quantity. Still the habitual cough of the workmen proves the irritant quality of these vapours.

At the meeting of the Royal Academy of Sciences of Paris, held February 16, 1846, Mr. T. Roussel presented a memoir on the same subject.

Many physicians, he remarks, have already noticed diseases produced in this manufacture. Gendrin has spoken of the severity of the bronchitic attacks among the workmen, and several German physicians are of opinion, that necrosis of the jaws originates from the same cause.

After a careful examination of the workmen in the French manufactories, he found that cough and bronchitis existed with more or less intensity amongst them, and also that diseases of the gums and maxillary bones, terminating in necrosis and sometimes in death, were not uncommon. So far as he could ascertain as to the last complaints, they were not ascribable to syphilis or scrofula, but only appeared after a sojourn in the manufactory for at least two years, and in individuals habitually exposed to the fumes of phosphorus. All the workmen affected, whom he had observed, had decayed teeth before the disease commenced, not unfrequently before commencing the manufacture. Many other workmen with sound teeth have preserved them in the midst of phosphoric vapours, a fact which induces him to believe that carious teeth constitute a predisposing cause of the disease.

As to the idea of some German physicians that the necrosis is owing to the vapours of arsenic, which in some manufactories is mixed with those of phosphorus, he shows that the effects of arsenic have nothing in common with these here observed, and again that necrosis of the jaw-bones happens where arsenic has never been employed. He thus attributes the principal action to the vapours of phosphoric acid.

The sanatary measures proposed by M. Roussel, are 1. To carry on every operation in a separate locality, and by this means greatly diminish the number of those now exposed to these fumes, and 2. To establish a perfect system of ventilation in the workshops of these who must necessarily continue exposed.

At the meeting of the same body, on the 9th of March, M. Seddillot of Strasburg, presented observations on necrosis of the bones of the face and pulmonary diseases in workmen of this description, which had occurred under his observation. His cases are very similar to those of Dr. Strohl. Three females were admitted in succession, each having laboured about four years in the manufactory. All had necrosis of the severe and large extent as in the worst instances already related, and the third of these was in addition suffering under phthisis, of which she died. The affected parts, in those who recovered, remained solid, and covered apparently with a mucous membrane of a red colour.

But on the other hand, Bricheteau (*Journal de Médecine de M. Trousseau*, March 1846), is disposed to doubt the accuracy of the above opinions. He remarks, that Heyfelder, Professor of Clinical Surgery at Erlangen, has published a number of cases of necrosis of the maxillary bones in workmen of this class, and that they are ascribed to the phosphoric fumes, and further, that in the manufactory at Nuremberg, nine cases have occurred, and the same number in the workshops of Vienna, according to Lorinser.

These facts appeared so extraordinary and alarming, that Chevalier and himself were induced to examine the manufactories of Paris, whether similar affections existed there. The result was, that among about two thousand workmen, male and female, no case of caries or necrosis is stated by the proprietors to have been noticed.

They collected however, the following: 1. A workman had been attacked with a disease of the jaw-bone, but no further information could be obtained concerning him. 2. A superintendent laboured under caries of the jaw-bone, but his attending physician considered it to be a syphilitic affection. 3. A female had been attacked with the same and died in one of the hospitals of Paris. 4. A female had an ulcer of the cheek, but her attending physician certified that this existed, before she entered the manufactory.

The workmen state that the vapours arising from the combustion of these matches, consist of sulphurous, phosphorous and phosphoric acids, that these produce cough among them, and this is always more severe in winter than in summer, as in the latter season, the windows being open produce a free ventilation, which it is impossible to obtain in the cold season.

Dr. Belfour, in the *Northern Journal of Medicine*, has added some interesting facts in relation to these manufactories. The dipping of pieces of wood in the phosphoric mixture and the drying of the matches, are carried on in ill ventilated rooms, from twelve to thirteen hours daily. In each establishment, from three to four pounds of phosphorus are daily employed in the production of from one to two millions of matches, the mere drying of which must give no inconsiderable quantity of phosphoric fumes, to which also must be added the quantity of metaphosphoric acid produced by the burning of sundry parcels, which, in spite of care, is not uncommon. It would seem that continued exposure to the fumes for a length of years, is requisite to produce the disease, as no cases were observed at Vienna until the manufactories had been at work upwards of eleven years. Scrofulous subjects suffer most and in them the disease is most fatal. Almost all the girls employed have the gums more or less affected, and at their junction with the teeth, a red ulcerated line, like that produced by mercurial salivation, is apparent. When the individual is robust and the necrosis is confined to a small portion o the bone, exfoliation takes place and a gradual cure follows, but where there exists any tendency to scrofula, phthisis becomes developed, and the patient sinks unde the combination.

It is mentioned in *Chambers' Journal* for July, 1846, from which this last notice is taken, that the Austrian government, in order to counteract as much as possible this distressing malady, has ordered the observance of the following precautions 1. That the matches must not be permitted to be dried in the workroom, and i possible this must be done in one situated above it. 2. That every second hour, the girls be obliged to wash their mouths with acidulated water, and 3, that they be sent out twice a day to take their meals and get some fresh air. These precautions are ordained on the recommendation of a medical commission.

T. R. B.

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59. *New test of Prussic Acid*, proposed by Mr. Richard Austin, jun., of Dublin The precipitate of the cyanide of silver, say half a grain, obtained in the usua manner, is mixed with a small quantity of oxide of iron and carbonate of potash and the whole fused together in an iron or platina capsule. The fused mass i then dissolved in half an ounce of distilled water, filtered and rendered slightl acid by the addition of a few drops of hydrochloric acid. The liquid thus treate is next divided into two portions, to one of which a few drops of a solution of sulphate of copper is added, which immediately causes the evolution of the chocolate brown colour, so characteristic of the ferro-cyanide of copper; and to the other

a few drops of the muriated tincture of iron, or any persalt of iron, when the solution becomes intensely blue by the formation of the ferro-cyanide of iron, the ordinary Prussian Blue.

In Mr. Austin's opinion, "these two tests, with the well known odour of prussic acid, are, independent of all others, sufficient to convince the medical jurist of the presence of free prussic acid."

The precipitates above mentioned, are very distinctly obtained with half a grain of the cyanide of silver.—*Lancet*, from *Dublin Hospital Gazette.* T. R. B.

60. *On the Natural Period of Delivery.*—By Dr. Le Ray.—1. The natural period of delivery, as premature delivery has a certain connection with the menstrual periods. 2. The return of these periods during the whole duration of pregnancy agrees with the period of the month corresponding to the date of the day on which the catamenia commenced to appear for the last time, whatever may be the number of days reckoned to each month. 3. The premonitory symptoms of delivery at the natural term, or premature, commence, in the majority of females, at the date mentioned, or during the seven days immediately succeeding. 4. Nevertheless, the commencement of the expulsive pains may still occur in the normal manner, but much less frequently at the fifteenth day of the tenth month. 5. Every delivery, whether at the natural term or premature, which occurs before the date mentioned, may be considered as accelerated. 6. Every delivery which occurs after the period mentioned may be considered as protracted. 7. The accelerations are proportionably much less numerous than the protractions; most commonly they do not precede the term specified by more than five days. 8. The protractions, on the contrary, are not limited by any period. 9. In either case, the causes of acceleration and protraction are very appreciable, although cases do occur where no cause can be assigned.—*Monthly Journal of Medical Science*, July, 1846. T. R. B.

61. *What constitutes the intent to commit murder?*—The following case is given in Carrington and Kirwan's *English Nisi Prius Reports*, vol. i. p. 176.

The indictment was for administering to Mrs. Day, a certain poison, called oxalic acid, with intent to murder.

It appeared that on the night of Saturday, the 1st of April, 1843, Mrs. Day had accused the prisoner, who was her servant, of stealing a table cloth, and that, it being Mrs. Day's custom to take her breakfast in bed, the prisoner, on the morning of Sunday, the 2d of April, brought to her, into her bed-room, the tea-pot and cup and saucer, and there *left them and went down stairs*, and that on Mrs. Day's *having helped herself* to some of the tea from the tea-pot, she found it had an acid taste, and on its being analyzed it was found to contain oxalic acid.

The jury found the prisoner "guilty of administering the poison, but not with intent to murder."

Baron Parke. That is tantamount to a verdict of not guilty.

It was urged by counsel that the prisoner might be convicted of an assault, under a recent English act, but the judges were of a different opinion. *Regina* v. *Draper.* T. R. B.

62. *On the presence of Sulpho-cyanogen in the Human Saliva.*—In experimenting for opium in suspected cases, it may be necessary to prove the presence of meconic acid. An excellent test for this purpose is the perchloride of iron. Even an extreme watery solution of the acid acquires a cherry-red colour on the addition of the perchloride. But unfortunately the sulpho-cyanic acid is affected in the same manner, and some chemists have asserted that sulpho-cyanogen exists in the human saliva.

It appears, by an article of Dr. J. L. Smith, in *Silliman's Journal*, for September, 1845, that Pettenkofer, finding there was a great diversity of opinion on this subject among chemists; that Gmelin, Ure, Liebig and Wright assented to its presence, whilst Berzelius, Kuhn and Muller disagreed to this, determined to re-investigate the subject.

The saliva used was collected from the author himself, and its secretion was promoted by smoking tobacco. "It was evaporated almost to dryness, exhausted with strong spirits, again evaporated, and the residue dissolved in water. The solution was very strongly reddened by neutral chloride of iron, and let fall some brown flakes, but it could not be caused to disappear by the addition of chloride of sodium or ammonium. The extract was boiled with sulphuric acid and a moist piece of lead paper held over it, which latter was rendered brown by sulphuretted hydrogen. It was submitted to other characteristic tests for sulpho-cyanogen, and responded to all of them."

According to Professor Christison, (*Treatise on Poisons*, fourth edition,) the best distinction yet proposed is that suggested by Dr. Percy. Acidulate the red fluid with sulphuric acid, drop in a piece of pure zinc, and suspend, at the mouth of the tube, a bit of paper moistened with solution of acetate of lead. If the redness be caused by sulphocyanic acid, hydrosulphuric acid gas is evolved and blackens the paper. Dr. Pettenkofer, it will be observed, pursued this process. No such effect ensues, if the redness be owing to meconic acid.

T. R. B.

63. *Poisonous Fish. Royal Society*, April, 1846.—Sir William Burnett, M. D., communicated a report which he lately received from Mr. Jameson, Surgeon of the Flag-ship at the Cape of Good Hope, of the rapidly fatal consequences ensuing from eating small portions of the liver of a fish known at the Cape by the name of the Bladder or Toad Fish, the *Aptodactylus punctatus*, or *Tetrodon* of Cuvier. The symptoms were chiefly pain and burning sensation at the epigastrium, constriction and spasm of the fauces and muscles of deglutition, rigidity of the tendons, coma, paralysis, and convulsions, following one another in quick succession, and terminating in death within twenty minutes after the poisonous food had been taken. Several other instances of the same kind are next related, and a narrative is subjoined of the case of a seaman who lost his life with similar symptoms, from the bite of a water snake in Madras roads; the *Coluber laticaudatus* of Linnæus, (*Hydrus Colubrinus* of Shaw,) and of a ship's company who were all severely affected by eating portions of a large *Banacuda.* (*Perca Major.*)

The author ascribes the symptoms induced by these deleterious substances to their action on the nervous system alone, these being evidence of congestion only, but not of inflammation, in the stomach and other viscera.—*London, Edinburgh and Dublin Philosoph. Magaz.*, Aug. 1846. T. R. B.

64. *Upas Tree.*—"The Dyak Darrat or Land Dyaks, seem to differ in no essential particular of language or customs, from the men of the sea, except in as far as depends on their inland position. The only remarkable difference of usage noticed by Mr. Brooke is, that the latter use and the former do not, the curious weapon called the *sumpitan*, or blowpipe, for shooting poisoned arrows. The wounds inflicted by these are curable," says Mr. Brooke, "by antidotes known to the natives; nor are they regarded, apparently, with much terror. And we suspect the whole romantic history of the poisonous trees of the Indian isles must be banished with so many other marvels, to the province of legends, since a friend of Mr. Davidson, in Java, to prove their absurdity, climbed up an upas tree and passed two hours in its branches, where he took his lunch and smoked a cigar."—*Edinburgh Review*, July, 1846. T. R. B.

65. *Spontaneous Combustion.*—This summer, the banks of the Cam exhibit an unusual multitude of those singular phenomena—cases of spontaneous ignition and combustion in growing willows. About a week ago, we observed, in one instance, at a point not far from Granchester, the process rapidly going on. It was really astonishing to look upon a fine willow, in the full vigour of robust vegetable health, pouring fourth clouds of smoke from its half-burned stem, and doomed speedily to expire—itself its own funereal pile. How explain this? How account for the fact that this tree, yet hale and green, covered with a rich mass of foliage and flourishing "like a green bay tree on the river bank," should suddenly burst forth into ignition, burn like tinder to its very core, and to-morrow be prostrate There is no putrescence—we think there can be no fermentation in this process. If instances of spontaneous vegetable combustion thus frequently happen, why dispute the analogous case of spontaneous animal combustion? The tree which w

observed last week, as stated above, is now prostrate—its very foliage charred—a vegetable ruin—as if stripped, shattered, blasted and half consumed by the electric fluid.—*Athenæum*, July 25, from the *Cambridge Advertiser.* Has anything similar been noticed in the willows of this country? T. R. B.

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66. *Alcohol—Paris Academy of Sciences*, July 13.—MM. Bouchardat and Sandras completed their series of communications on the digestion of food, by an article on the effect of alcoholic liquids. They state that these liquids do not undergo in the apparatus of digestion, any other change than that of being weakened by the gastric juice and mucus, the saliva, and the other liquids which may be present. The absorption of alcoholic liquids is effected by the orifices of the veins. It is particularly in the stomach that this takes place, when these liquids are taken in excess, or mixed with sugar. The absorption, however, may be continued throughout the intestines. The chyliferous vessels perform no part in this absorption. Spirituous liquors, when introduced into the circulation, are not eliminated by any of the secretory organs; a small portion only is evaporated by the lungs. If the quantity taken be very great, the arterial blood preserves the colour of the venous blood, and alcohol may induce apoplexy. Alcohol, under the influence of oxygen incessantly introduced into the system by the respiration, may be immediately converted into water and carbonic acid, but in many cases, acetic acid has been obtained.—*Ibid.* T. R. B.

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67. *On the Blood in bodies killed by Strangling.*—Ciccone made the following communication to the scientific association at Naples. After he had observed that in persons destroyed by asphyxia, the quantity of fibrine in the blood is diminished, and that the circulation continues for some time after respiration has become suspended, he further found, that in cases where the respiration, as also the return of the blood in the jugular veins to the heart, had become prevented by a ligature placed round the neck, whilst the greater circulation, and hence also the metamorphosis of arterial into venous blood, which, although now imperfect, takes place in the capillary vessels, the blood accumulating in the jugular veins, that portion of this fluid which is above the ligature contains the normal quantity of fibrine, while in that which is below the ligature the quantity is diminished, This observation is thus far of value, that if the body has not been killed by strangling, and the ligature has not been applied until after death, these changes in the blood will not be found. At the same meeting, Cappa detailed his experiments; he found that in ten strangled fowls, death was in six instances caused by asphyxia and apoplexy combined; twice by asphyxia alone; and twice by apoplexy alone. In the last cases, on the microscopic examination of the blood above the ligature, its corpuscles were found distended, and generally without a central nucleus; some of them were elongated, and others again in conglomerated masses, while the blood corpuscles in all the other parts of the body presented their natural appearance Where death had been the result of asphyxia alone, all these alterations in the corpuscles were, on the contrary, observed only in the parts of the body below the ligature; and lastly, where death had been caused by a complication of apoplexy and asphyxia, the alterations in the blood corpuscles could be seen in all parts of the body without distinction. The above test could therefore, in his opinion, be applicable only in the two first circumstances, viz., where death was from apoplexy or asphyxia alone, and not where it was caused by these two conjoined, which occurrence was by far the most frequent. Where death was the result of apoplexy, he had certainly seen the jugular veins thicker and more full of fibrine, and he had seen exactly the reverse where asphyxia had been the cause; but where death was accompanied with symptoms of apoplexy and asphyxia conjoined, this test was of no avail.—*Monthly Journ. Med. Sci.*, Sept. 1846, from *Annali Univ. de Med.*, Nov. 1845.

MISCELLANEOUS.

68. *On the Composition of Air at different heights in close Apartments.*—M. Lassaigne has drawn the following conclusions from a series of experiments on this subject:

1. In rooms where the air is confined, and has been respired for some time without renewal, the carbonic acid expired is not found exclusively, as some have asserted, in the lower strata.

2. In accordance with the laws of physics, confirmed by experiment, the carbonic acid is nearly equally diffused throughout the whole volume of confined air which has been respired by a certain number of persons.

3. The slight differences observed would lead to the inference, that the proportion of carbonic acid was, under these circumstances, greater in the upper strata, were it not that the differences may depend upon errors in the quantitative estimation of the gaseous components of the air.

4. These facts show the erroneous principles upon which some modern theories of ventilation are based: for it is clear that the *whole* mass of air which has been respired by many persons requires renewal, so that the vitiated air may be entirely expelled.

5. The uneasiness experienced from respiring the heated air in the upper part of crowded and badly ventilated theatres, is due rather to its rarefaction than to its chemical composition; for the latter is almost identical in the upper and lower strata. The acts of respiration are more (?) full and frequent when rarefied air is breathed; hence certain physiological effects are induced which are not observed in the respiration of air at the common temperature.—*Lond. Med. Gaz.*, from *Comptes Rendus.*

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69. *Means of neutralizing exhalations of Sulphuretted Hydrogen.* M. Faucille, being charged with the direction of the works for exploring the fountain Lucas at Vichy, had to contend against a disengagement of carbonic acid gas so abundant, that it had become dangerous to enter the pits. He had in vain tried ventilation by heated air, clearing by means of compression, projection of water, either in a stream or a shower, lime water, &c. M. F. placed on the edge of the pit a small boiler, a pipe from which descended the excavation, conveying to the bottom of it the steam generated in the apparatus. The steam, on issuing from the mouth of the tube, became, after a few moments, opaque, and as it were, full of sooty particles: it then gradually recovered its transparency. At the end of twenty-five or thirty minutes the pits could be entered without danger. The transmission of this steam was required to be continued during the whole period of the works, which were then advanced as far as necessary. M. F. had been able, under the circumstances, to apply the same process to destruction of the vapours of sulphuretted hydrogen.—*Monthly Journ. Med. Sci.*, Sept. 1846, from *Annales d'Hygiène*, April, 1846.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Address to the Medical Profession, in relation to the objects of the National Medical Association, by the committee appointed for that purpose.

Abstract from the minutes of the proceedings of the National Medical Convention, held in the city of New York, in the month of May, 1846.

"*Resolved*, That a committee of seven be appointed to prepare, and issue an address to the different regularly organized medical societies, and chartered medical schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to a Convention to be held in Philadelphia, on the first Wednesday in May, 1847."

In obedience to the above resolution, the committee appointed for the purpose present the following remarks to the members of the medical profession generally, as well as to the several bodies named in the resolution:—

In compliance with an invitation from the Medical Society of the State of New York, delegates from various medical societies and schools met in Convention in the city of New York, on the first Tuesday of May, 1846. About one hundred members were present, representing thirty-four different medical associations, and residents in sixteen different states of the Union. The object of the Convention was, by a concert of action of medical men from every part of the country, to advance the interests, the honour, and the usefulness of the profession. The result of their deliberations, as shown in their published proceedings, has been widely circulated, so that all who take an interest in such matters, are probably fully informed of it; still, some remarks upon the course which was pursued, together with the reasons for it, may be appropriate.

The first object which engaged the attention of the Convention, was the necessity of forming some plan of organization, by which medical men in every part of the country may communicate with each other, and act in concert, in regard to their common interests. The general opinion was, that this desirable object would be best attained by the formation of a National Medical Association, to consist of members from every part of the country, who should meet together for consultation and action, at such times and places as they might deem expedient. Although no doubt was expressed of the propriety of such an organization, there were other subjects connected with it, such as, who should be members of the association? how and by whom should they be selected? if delegates, what should be their number? what power should be conferred upon them, and how far should their acts be binding upon the bodies whom they represent? concerning which there would probably be difference of opinion. As no one had been charged with the consideration of these subjects, no definite plan of organization had been prepared, upon which the Convention could act with that careful deliberation which the importance of the business demanded. It was thought best, therefore, to postpone all definite action upon it until a future Convention. This opinion was strengthened by the fact, that although the number of members present was larger than had been anticipated, yet many most respectable medical societies and schools, who are doubtless equally solicitous with those who were present, for the welfare of the profession, and as ready to promote its interests, were not represented. This deficiency, it was hoped, would be remedied in a future Convention. In the meantime, the consideration of these subjects was intrusted to a committee, who will prepare a plan for a National Medical Association, which will be presented to the proposed future Convention.

The other subjects which engaged the attention of the Convention, related principally to medical education; such as the qualifications which should be required of those about to engage in the study of medicine; the course of study which should be pursued by them; the mode of examination which should be adopted, and others of a similar kind. For reasons like those given above, these several matters were also placed in the hands of committees to examine, and report upon them. The same course was also pursued in regard to the preparation of a code of medical ethics, by which the intercourse of physicians with each other, and with the public, shall be regulated.

From this statement it will be seen that matters of great interest are presented for consideration, and that if wise measures in regard to them are adopted, such errors and abuses as may be found to exist, will be corrected; the profession will be guarded against the admission of incompetent or unworthy members; the purity, professional and moral, of those who are allowed to continue in it, will be preserved; and that thus full assurance, such as it has a right to demand, will be given to the community, that all who are acknowledged by medical men to be of their number, are worthy and competent to perform the duties, and to sustain the responsibilities o an arduous and honourable profession.

It remains to be seen whether these desirable objects shall be accomplished. It is obvious that this can be done only by general and united exertion. All partial or divided action will be unavailing. It is equally true, that whatever is done, must be accomplished by medical men themselves. In some countries, the interests of the medical profession, like others of great importance to the community, are regulated, sustained, and protected by public law. In this country, no general law, even if it were desirable, can ever exist. In many of the states, no laws upon this subject have ever been enacted; in several, where they have formerly existed, they have been repealed, and in those where they still remain, there is a general complaint of their inefficiency. In this state of things, the only resource which remains, is, for medical men to establish and enforce among themselves such regulations as shall purify and elevate their own body, and thus more fully command the respect and confidence of their fellow-men. The proposed association, if it becomes general, may be the means of accomplishing much of this good work. The opinions of such a body of the most respectable members of the profession, enjoying the confidence o their brethren, and of the public, freely expressed after full consultatio and careful deliberation, although not clothed with the authority of law, wil still command respect, and for the most part, compliance. A public opinion in regard to the subjects decided upon, will be created, which will b more controlling than law. It is by creating and sustaining a sound an healthy public opinion, that the association will prove most beneficial.

In calling the attention of the physicians of this country to such an effor at this time, it is not intended to express the opinion, for no such opinio is entertained, that they are behind those of other countries, or the mem bers of the other professions in this, in general intelligence, in scientific attainments, or in practical skill. Still it is to be remembered that the present is peculiarly an age of advance in every department of science, and that at such a time to rest satisfied with present attainments, and to make no provision for increased acquisitions, is practical retrocession.

In this state of things, the committee feel themselves fully authorized to call upon the medical profession throughout the country to consider, carefully and deliberately, the matters which have been presented to them, and upon which a future Convention will be called on to act. They also earnestly invite all medical societies, the faculties of all medical colleges, and all similar associations, to appoint delegates to meet in Convention in Philadelphia, on the first Wednesday in May, 1847.

It is confidently believed that a Convention thus constituted, embodying the wisdom, and acting under the sanction, and with the authority of the united profession, will devise such measures as shall command the respect of all who are interested in the promotion of medical science, and the physical welfare of man. In behalf of the committee,

J. KNIGHT, M. D., *Chairman.*

Legal Medicine.—1. Protracted Gestation.—2. The right of Physicians to compensation for post-mortem examinations at inquests.

Philadelphia, July 29, 1846.

To Isaac Hays, M. D.

Dear Sir:—The Hon. Ellis Lewis, of Lancaster, Pa., has kindly forwarded to me, for your Journal, two of his charges, bearing on medico-legal questions. One refers to the case of the "Commonwealth *v.* Elisha F. Hoover," indicted for fornication and bastardy; the other to a suit brought by me against the county of Lancaster to test the principle of compensation for post-mortem examinations at inquests.

In reference to the case of fornication and bastardy, I will give you memoranda of two cases, occurring in my practice several years ago, viz:—

Case I.—The wife of Valentine Shaeffer, Rapho Township, Lancaster County, lost her catamenia, March 22d, 1832, quickened August 5th, 1832, was delivered March 22d, 1833, with forceps, of a female child. First presentation, fourth child.

Case II.—The wife of Samuel Henry, same township, lost her catamenia August 6th, 1832, quickened December 25th, 1832, was delivered August 13th, 1833, of a female child. First presentation, third child.

Both the above children were living, healthy, and unusually large, and the mothers enjoyed excellent health.

In these cases there was no possible motive for deception, nor is it probable that the women were deceived. They experienced the same symptoms as in previous pregnancies, and made their calculations as before, engaging my services for a period long before the time they were actually required. From the moment of quickening, they continued to feel the motions of the children daily, until the time of parturition.

I have not the least doubt of the truthfulness of the evidence in the above cases. The circumstances were so extraordinary to me at the time that I closely investigated them so as to satisfy myself on this point.

If these are not cases of protracted gestation, how are they to be explained? Very respectfully, yours, &c.,

WASHINGTON L. ATLEE.

LANCASTER QUARTER SESSIONS—*Hon. Ellis Lewis, Pres't.*

1. *Com.* vs. *Elisha F. Hoover.* Indicted for fornication and bastardy, with Catharine E. Rife. This trial lasted two days, and excited considerable interest from the vigour with which it was conducted and the novelty of the defence. The complainant swore that the child was begotten on the 23d of March, 1845, and born on the 30th of January, 1846, making the period of gestation 313 days—being 33 days over the usual time. The defence relied mainly on the *time*, and called several physicians to prove the *impossibility* of gestation being protracted so much beyond the usual period. Doctors Kerfoot, Burrowes, Alex. Cassidy, J. S. Carpenter, Smith and Leonard, testified with more or less positiveness against the possibility of protraction. Dr. KERFOOT considered that nature had established nine calendar months as the period of healthy gestation, and that that period could not under any circumstances be materially extended. Dr. Burrowes had formed his opinion from the absence of facts: he had never known gestation to exceed nine calendar months, and did not believe it possible. The other medical gentlemen called on the part of the defence concurred in substance with these, though they all admitted that *the books* generally held differently.

The prosecution called Doctors John L. Atlee, F. A. Muhlenberg, P. Cassidy, H. Carpenter, Fox, and Baker.

Dr. J. L. ATLEE was of opinion that the ordinary period of utero-gestation was nine calendar months, or from 270 to 280 days—that, although improbable, there was a *possibility* of its being protracted to 313 days. He had formed his opinion from two cases which had occurred in his own practice, in which, by all the usual methods of calculation, the patients must have gone at least ten calendar months—from the testimony and opinions of standard authors—such as Wm. Hunter, Burns, Merriman, Blundell, Velpeau, Moreau, Dewees, &c. &c.—and from analogous cases among domestic animals, as proved by experiments made with great care, particularly by M. Tessier, in France.

The other gentlemen called for the prosecution concurred in the opinions of Dr. Atlee, for various reasons stated, which we have not space to report.

Charge of the Court.—COM. VS. ELISHA F. HOOVER. The defendant is indicted for fornication and bastardy.—The prosecutrix, CATHARINE E. RIFE, is a competent witness, but her credibility is for the jury. According to her account, the child was begotten on the 23d of March, 1845. It was born on the 30th January, 1846—a male, fine, large and healthy. The period of gestation was 313 days. It is conceded that the defendant had no intercourse with the mother after the 23d of March, 1845, and the time of delivery is fixed with equal certainty. A question of science has arisen respecting the possibility of protracted gestation.

The usual period is nine calendar months, or from 273 to 275 days. What has been denominated the *extreme* of the *usual period* is 280 days, or ten lunar months. But whether any, and if any, what longer time may be allowed as possible, are the questions which this case presents for decision. Medical writers of celebrity and authority are arrayed on both sides of these questions. And the medical witnesses upon the stand are, in like manner, divided in opinion. In construing this evidence, so far as respects the FACTS narrated by each, it is proper to consider that writers and witnesses are respectively relating only the results of their own knowledge: and, when one states that no case of protracted gestation has fallen under his observation, it is but negative testimony, and cannot justly be relied upon to invalidate the affirmative evidence of others equally entitled to credit, who enumerate cases of the kind, which they positively affirm to have come within the range of their practice and knowledge. In the most familiar transactions of life, witnesses will differ in their narration of the circumstances. In an account of a simple assault and battery, the bystanders frequently vary in their statement of the facts. Some narrate incidents which others omit. Conceding all the witnesses to be equally worthy of credit, the rule is to reconcile their evidence so that all will stand consistently together, if this be reasonably practicable. Some witnesses observe circumstances which others have not seen. Negative evidence is therefore deemed insufficient to outweigh affirmative statements from witnesses equally entitled to credit. One gentleman, in a long course of practice, may have failed to observe any case of the kind. Another, in a very brief period, may have noticed several. And it is reasonable to believe that where such a diversity of OPINION exists, each will be in some measure influenced by his own professional experience; and that this will also, to some extent, affect his belief in the cases reported by others. There are doubtless many of these cases where the struggle for character and property, and the circumstances of the parties whose interests have been involved, have furnished temptations to falsify, and may have influenced the decisions of the tribunals. But, after making all proper allowances for cases of this description, the whole evidence on the question, when fairly considered, appears to show that cases of protracted gestation are not impossible, although their existence is very unusual.

The heads of wheat in the same field do not all ripen together. The ears of corn on the same stalk do not all come to maturity at the same time. Even the grains of corn on the same ear ripen at different periods. The fruit on the same tree shows the like deviation. A portion will ripen and fall while other portions remain comparatively green upon the parent stalk. The eggs of the fowl, under process of incubation at the same time, are subject to the same variation. In quadrupeds, if the testimony of M. Tessier be believed, we have proof of the like irregularity. Whatever may be the causes, operating in each case, to divert nature from her accustomed course, to accelerate or delay her usual progress, the human species, like the rest of creation, seems occasionally under their influences. The developments of puberty, although generally shown at a certain age, are far from regular. Some individuals approach it earlier—others later in life. Intellectual maturity is subject to the same irregularities. Some are precocious, others astonishingly tardy in arriving at the usual degree of discretion. The intervals between the catamenial visits, although in general regular and fixed, exhibit remarkable deviations. The final departure of the catamenia, although generally to be expected at a certain age, is as irregular as their first approach, and as subject to variation as were their periodical returns. A certain period of life has been usually assigned for the termination of a mother's perils, but the instances of extensive deviations from this general rule are numerous and well-established. The gestation of one child at a time is according to the usual course of nature, but the births of twins, triplets, &c., furnish indubitable proofs of astonishing departures from the usual course. The sensations of the mother produced by the elevation of the fœtus from the cavity of the pelvis, (called quickening,) although usually occurring at a certain period, are known to be subject to the like departure from the usual time.—It has been said that human life does not generally extend beyond 70 years. But if this be the general rule, the departures are numerous. The most distinguished jurist perhaps, now living in the whole world, (Chancellor Kent,) will be 83 years old on the 31st of July next; and yet, within a few days I have been honoured by the receipt of a letter from him, under date of the 18th inst., in which he states that he is still in "good and active health—that his relish and ardour for studies and legal learning continue unabated—that he has the blessing of good eyes, and that he is still an observer of what passes with lively sensibility." This instance may serve to illustrate not only the occasional deviation from general rules respecting the duration of human life, but the like variation in respect to intellectual vigour, by which one individual attains a pre-eminence over the generality of mankind. All Nature abounds with occasional departures from her general customs. Even the compass, which guides the mariner on the trackless ocean—which enables science to fix with reasonable certainty the boundaries of kingdoms and farms, and the truthfulness of which to its accustomed law has been perpetuated by a proverb—is subject to mysterious but acknowledged variations.

From analogy, and from the statements of distinguished authors and eminent witnesses, after making every allowance for mistakes, and the operation of unfavourable influences, we are led to the belief that, although Nature delights in adhering to her general usages, she is occasionally retarded in her progress, and otherwise coerced, by causes not always apparent, into extensive deviations from her accustomed path.—And we are induced to believe that protracted gestation, for the period of 313 days, although *unusual* and *improbable*, is not *impossible*. The evidence to establish the existence of such a considerable departure from the usual period, should be clear and free from doubt. The witness should possess a character beyond reproach, and her testimony should be consistent and uncontradicted in all material facts. If the jury are satisfied that the evidence for the commonwealth is of this character, the unusually long period of gestation does not require them to disregard it. The law fixes no period as the *ultimum tempus pariendi.* The usual period has been stated, but longer time may be allowed, according to the opinions of physicians and the circumstances of the case. The question is, therefore, open for the decision of the jury. If they believe the witness, they may find the defendant guilty.

[Here the court drew the attention of the jury to the prominent facts, tending on the one side to impeach, and on the other to support, the credit of the prosecutrix; and then left the case to the jury, with the direction that, if they entertained reasonable doubts of the defendant's guilt, he was entitled to an acquittal.

April 24th, 1846. ELLIS LEWIS.

Note.—A lady of respectability was examined on oath, in the course of the trial, and stated that she had been the mother of nine children—that to the best of her judgment and belief, the period of gestation, in the case of the 7th child, was over ten months. That in addition to the usual data she relied upon the time of quickening, which happened, as she believed, at the usual time, and that the birth of the child did not take place until seven months after that event.

The jury found the defendant GUILTY, and the usual sentence was passed upon him.

Frazer and Mathiot for the commonwealth—Stevens for the defendant.

2. *Has a physician a right to compensation for making a post-mortem examination at the request of a coroner?* Opinion of the Hon. Judge Ellis Lewis.

Dr. W. L. Atlee *vs.* Lancaster County. No. 50, January, 1844.

Opinion of the Court.—This is an action to recover compensation for professional services rendered by the plaintiff, as a physician, at the request of the coroner, upon a *post-mortem examination.* It is the duty of the coroner, in cases of sudden death, or where any are slain, to hold an inquest, *super visum corporis*, to inquire into the cause of death, "by the mark on the neck, or by a mark on any of the limbs, or *by any hurt found on the body*." 4 Ed. 1. The statute of Edward the 4th, regulating the duties of the coroner, in this respect, is in affirmance of the common law, one of the great advantages of which is, its constant adaptation to the progress of business, the advanced state of the sciences, and the habits of the people. In this enlightened age, a coroner who would undertake to consign to the grave, the body over which he had held an inquest, without availing himself of the lights which the medical science has placed at his disposal, would be regarded as unfit for the office, and unworthy the age in which he lives. A thorough examination, aided by the highest professional skill within reach, is absolutely necessary to the administration of justice. Without such examination, groundless suspicions may be entertained, and prosecutions commenced, at once cruel to the objects of them, expensive to the county, and wasteful of the time and talents of all persons engaged in them. But this is not all. Without a thorough examination of the body, and a complete demonstration, from the evidence thus in the power of the commonwealth, that the death was caused by violence, the guilty agent cannot be convicted. When, from ignorance in the examination of the body, the cause of death is left in doubt, the accused will, in general, escape the just punishment due to his crime; because in all cases of doubt, he has a right, under the law, to demand an acquittal. Thus, the guilty are again let loose upon society, and the public is deprived of that protection which the laws were intended to provide. There can be no doubt of the duty of the coroner to require such aid as was given in this case; and it seems equally clear that his powers are commensurate with his duties.

It is true that medical witnesses may be called upon to give evidence of any *facts* within their knowledge, and also of the *opinions* which their researches and experience have enabled them to form on questions of science pertinent to the case. But they cannot be compelled to devote their time and talents, without compensation, to the unpleasant duties of a *post-mortem examination*—to assume the responsibilities of an investigation, upon which the life of a fellow-being may depend—and to encounter the painful ordeal of a thorough cross-examination, generally conducted by gentlemen of science and courtesy, but sometimes by individuals not remarkable for either.

Even where nothing further is asked of the medical practitioner than his attendance as a witness, his case is one of peculiar hardship. His business is of a character which requires the employment of his own skill and judgment. It is in these alone that his patients confide, and no deputy or substitute can supply these qualities. To him the ordinary fee of a witness is a very insufficient compensation. "The same policy which exempts medical practitioners from attendance on other public duties may suggest the propriety of allowing them some adequate indemnity when their assistance becomes indispensable; and this not only for their private and immediate advantage, but ultimately for the public benefit; for, if properly remunerated for their attendance, practitioners of a superior class would not be unwilling to devote some portion of their time to the assistance of public justice; whereas, under the existing system, it is notorious that all who can will avoid the burden; and the duty, therefore, devolves on those who are least competent to its execution; this evil is particularly apparent on coroners' inquests, where the opinion of a shop boy has often been allowed to determine a question *in limine*, which, properly investigated, might have required the first science to obtain a satisfactory result." 1 Par. & Fonbl. Med. Jur. 157.

As attendance is more burdensome on a professional man than on others, so also is it more frequently called for. Other men are only called to testify to FACTS within their knowledge. The professional man is called upon for his OPINIONS. Those, therefore, who stand highest in public estimation, and whose time is most valuable to themselves and their patients, are the most frequently called to discharge these unprofitable duties. A consideration of these circumstances, has doubtless led to the practice in England of allowing medical witnesses more than the usual witness fees, as a compensation for the loss of time. Willis *v.* Peckham, 4 Moore; Severn *v.* Olive, Mich. Term, 1821, C. B. Two guineas per day is the usual allowance to medical witnesses in England, " but no allowance is made for the time spent in making chemical experiments, *for the purpose of perfecting themselves in the science which they profess*, because it is alleged that they ought not to *acquire their knowledge at the expense of the parties*." Ap. to 3 Paris & Forb. p. 203; Severn *v.* Olive. How far they should be allowed for the time spent in the application of that knowledge to the particular case under investigation is a question entirely different. The principle by which they are compensated for their loss of time as witnesses, and considerations of policy and justice, sanction an allowance for the loss of time spent in a *post-mortem* examination.

This expense is a necessary incident to the administration of justice for the county. The coroner of the county is charged with the duty of holding the inquest, and has, as an incident to his authority in this respect, the power to summon such aid as the purposes of justice may require. In doing so, he acts not in his individual capacity, but in his official character as the officer of the county. "The power to order, implies the promise to pay." Commissioners *v.* Hall, 7 Watts, 291. It is upon this principle that the county is liable for the contingent expenses of the court—for the fire-wood, candles, &c., consumed in the court house—for the expenses of keeping a jury together at a hotel when ordered by the court, as is usual in capital cases—as for the expenses of medical services ordered by the court for a juror suddenly ill. 7 Watts, 291.

The plaintiff is, therefore, entitled to recover in this action, such a sum as the jury shall deem a reasonable compensation for his services.

Nov. 28th, 1844. ELLIS LEWIS.

The jury rendered a verdict in favour of the plaintiff for the whole amount of his claim.

Case of a Catheter left in the Bladder, in drawing off the Urine for Retroversion of the Uterus. Communicated by E. W. Theobald, M. D., of Baltimore, Md.

I have met with the following case recorded in the *Medical Facts and Observations*, London, 1791, p. 96, by Wm. Ford. Since reporting one in the April number of the *Amer. Jour. of the Med. Sciences*, bearing a very striking resemblance to it; and it being, so far as my observation extends, the only one of the kind previously on record, I beg leave to subjoin it.

"Mary Wilding, a thin delicate woman, about twenty-five years of age, was admitted in January last, as a patient at the Westminster General Dispensary. She complained of a painful and involuntary discharge of urine, mixed with blood and matter, from the urethra; and also of a discharge of purulent urine, which was continually flowing from a fistulous sore, situated in the buttock, near the middle of the glutæus muscle. She was in a weak and emaciated state, and had been confined to her bed for several months; every attempt to move from thence being attended with most severe pains, both in the neck of the bladder, and at the fistulous wound in the nates.

"Upon introducing a sound into the bladder, an extraneous substance was easily felt within its cavity; and from its hardness, I judged that it might be a calculous concretion. At the patient's desire, I then proceeded to examine the fistulous sore on the buttock, and she told me there was a loose bit of bone in the wound, which frequently made its way outwards beyond the skin, but as often seemed to be retracted with considerable force. I found, by examining it with the probe, that it lay loose in the sinus, and I endeavoured to remove it with the forceps, gradually drawing it outwards. This process was not attended with much pain; but when the extraneous substance was brought forward about half an inch beyond the integuments, a further removal of it seemed impracticable, as it was strongly held back by the contraction of the muscles. Whilst it was retained externally by the forceps, I viewed it closely to ascertain whether it was an exfoliation of carious bone, or a calculous concretion that had made its way outwards from the bladder, but was much astonished to find that the substance, protruded from the wound, was evidently the bulbous end of a silver catheter.

"This discovery instantly induced me to suspend any further operation, as it was clear that an attempt to remove the catheter by extracting it forcibly through the wound, must occasion a considerable laceration of the fundus of the bladder; and I was anxious to collect from the patient such circumstances as might explain her unfortunate situation. She professed herself totally ignorant by what means the catheter had been lodged in her bladder, and could with difficulty believe the information I gave her. The narrative she furnished me with was, that she had been brought to bed four months; that in the third month of her last pregnancy, she had been seized with a difficulty of voiding her urine, which had been several times drawn off by means of a catheter; that she had experienced great relief from this operation, but that the last time it was performed, she had felt great pain, and had ever since been unable to remove from her bed without great distress; that she had been safely delivered at the expiration of the ninth month: and that she had since suckled her infant, though in the most wretched and debilitated state. It was obvious from this account, that the catheter had escaped from the hands of the operator the last time the urine had been drawn off; that it had slipped into the bladder, and had been suffered to remain there; and that the only method of relieving her was to extract it through the meatus urinarius.

"From the weak state in which she lay, exhausted by suckling her infant, by pain, and by the discharge from the wound, I declined performing the operation, till her health should be a little invigorated by weaning the child, and by a more nourishing diet. When this was accomplished, I was favoured with the assistance of Dr. Jackson, Dr. Bland, and Dr. Combe, all of whom were anxious to see so singular a case.

"The patient was laid upon a table, and secured in a manner usually adopted in the operation of lithotomy. The urethra was dilated by the blunt gorget introduced upon a female staff, and the catheter was then attempted to be taken out by the forceps. This part of the operation was attended with much difficulty, as the catheter lay transversely in the bladder, the handle of it resting on the arch of the pubis, and its other extremity on the crura ischii. It was dislodged from its situation by drawing the blunt end outwards through the posterior wound, so that the handle of the instrument being detached from the pubes, was more easily brought forward through the opening in the urethra, and extracted. The catheter, which is now in my possession, was found covered with a slight incrustation.

"The operation was finished by extracting a few small calculi from the bladder. The patient was then put to bed, and the same regimen pursued as after cutting for the stone. A slight fever came on, but was apparently more owing to the state of her breasts, as she had just weaned her child, than to the operation. The fistulous opening on the buttock healed in a few days, the urine passing entirely through the natural passage; and in one month she was perfectly well. She now retains her urine, and suffers no inconvenience from this extraordinary calamity.

"The foregoing case is, I believe, unprecedented in medical history. It affords a singular example of an accident occurring from an operation in surgery, which has usually been deemed easy to perform, and free from hazard. The natural structure and situation of the female urethra, warrant the general opinion of the safety of this operation; but where an alteration takes place in these parts, either from pregnancy or other causes, the operation of drawing off the urine may become liable to difficulty.

"In cases of retroverted uterus, we find, by the testimony of Dr. Hunter, and other practitioners, that this operation is not always to be done with facility, and that in some cases it has been impracticable. The poor woman who is the subject of this paper, had been liable to a retroversion of the womb, both in this and in a former pregnancy. Her urine had been drawn off a few days before this accident by a man-midwife of eminence; but being suddenly taken ill, she applied to a person in her neighbourhood, from whom this accident happened. His business obliging him to leave London, he heard no more of his patient, and imagined, I suppose, that the catheter had been expelled by the efforts of the bladder."

Golden Square, May 16th, 1791.

Case of Injury of the Foot.—Amputation, excessive hemorrhage from the stump. By J. C. Butler, M. D., of E. Berkshire, Va.

Mr. J. H. Hazletine, æt. 32, of sanguine temperament, consulted me in a case of long standing disease of the right foot. The history the patient gives of it is, that in the winter of 1839, a large mill-log rolled from a sled upon his foot, producing serious injury of the phalangeal and metatarsal bones, and the soft parts nearly as high as the ankle. The toes were removed at first dressing; subsequently two metatarsal bones; but there yet remained an extensive and obstinate ulcer upon the external and inferior surfaces, extending back to the heel, measuring fifteen and a quarter inches in circumference, discharging from six to ten ounces of pus per day since the accident. Very painful, particularly during the night. The ankle-joint was healthy; muscles of proper consistence; skin appeared sound; the hair was as numerous and thrifty as upon the other leg. I recommended amputation of the leg, and accordingly proceeded to operate.

February 19, 1846, assisted by my father S. S. Butler, M. D., and Drs. Babcock, Cushman and Stone, and in the presence of several students, I performed the flap operation about the middle of the leg; the muscles and bones appeared to be perfectly sound. The two tibial, the peroneal, and one large cutaneous artery were ligatured. Upon loosening the tourniquet we were saluted with a torrent of blood little anticipated. Compression was instantly applied upon the femoral artery by means of the tourniquet, and before hemorrhage could be completely controlled, another was applied to the popliteal space. Upon close examination I found it to be venous as well as arterial blood gushing from every portion of the stump. We applied *twenty-seven* ligatures to both arteries and veins; four ligatures included several vessels each. We think we can safely estimate over forty arteries and veins *tied*, besides many smaller arteries arrested by tortion. The venæ comites were enlarged to nearly or quite double their natural calibre. The usual dressings were then applied and the patient put in bed. The wound healed by first intention, and patient dismissed the seventeenth day, with directions to use a spare diet, moderate exercise, and gentle laxatives if necessary.

March 15th. Was called; found him complaining of severe pain in the head, loss of appetite and great prostration; pulse 65. Right angle of the mouth and nostril of the same side elevated; cannot restore them to their proper positions by an act of the will; an incapacity to close the eyelids of the left eye. ℞.—Seton to left arm, blister to the back of the neck; drastic cathartic composed of calomel jalap and gamboge; frictions to extremities.

16th. Pain in the head somewhat abated; disfiguration of the face continues; repeat cathartic; blisters to the arms.

17th. An evident improvement. Slight pain in the head, but complains of pain in the back. Pediluvium and frictions to extremities.

18th. Much improved from yesterday. Free from pain. Appetite returning; volition extends to the muscles of the face; repeat blister to the neck.

23d. Found him still improving; face assuming more natural appearance; dismissed the patient with directions to take a light and spare diet.

I have seen Mr. H. from week to week to the present time. There yet remains a slight elevation of the angle of the mouth, and paralysis of the eyelids of his left eye. His health and strength are good. The case presents two important features—the extraordinary hemorrhage after amputation, and the train of symptoms which followed healing of the stump.

DOMESTIC SUMMARY.

Report upon the Hemostatic Virtues of the Brocchieri Water and Ergotine.—The *Southern Journal of Medicine and Pharmacy* (March and July, 1846) contains an interesting report by the editors, Drs. Smith and Sinkler, on the hemostatic virtues of the Brocchieri water and ergotine. We have not space for the experiments in detail, but must restrict ourselves to the results, and which, it will be perceived, accord with those of the Committee of the Virginia Medical Society, in our preceding number, p. 146.

"From the numerous experiments performed, and from the manner in which they were modified, as well as the care bestowed upon them, without reference to their favourable or unfavourable results, we are warranted in coming to the following conclusions:

"1st. That when Brocchieri Water, ergotine, or a watery emulsion of creosote, is applied to the divided artery of a sheep, it depends greatly, if not altogether, upon the manner in which the lint is applied to the wound on the artery, whether the hemorrhage is arrested or not. If it be placed immediately upon the orifice of the cut vessel, the success is certain; if, however, the vessel shrink from contact with the lint, the animal is almost certain to bleed to death. The former is shown by the experiments 4 and 5 of the first report, and by 3, 5 and 6 in the present one; and the latter, by experiments 1, 2, and 4, in this report.

"2d. That by a small pledget of *simple lint*, placed immediately upon the incision made into a sheep's carotid artery, that the hemorrhage is arrested in a few moments; and after a lapse of from twenty to thirty minutes, the animal may be let loose, without any apprehension of the return of the hemorrhage. If the lint be applied so as not to touch the wound in the artery, all effort to arrest the hemorrhage becomes ineffectual; this is proved by reference to experiments 1, 2 and 3 of the first report, while experiments 7, 8 and 9 give evidence of what was first stated. From these results, it will be seen how many difficulties often attend the simplest experiments, and how important it is to leave no point, not the most apparently trivial, without close examination; it is true, it requires time and trouble, but both are more than compensated for, by a knowledge that we become in possession of truths that are important to ourselves and to others.

"3d. The sheep is an unfit animal to try the hemostatic power of substances, with reference to what their fitness may be in the case of the human subject; for although sheep will bleed to death by a wound in one of the larger arteries, still, by the application of a small pledget of lint, sustained with a little pressure *immediately upon the wound in the vessel*, the hemorrhage will cease, and the animal survive. The same we are convinced may be said of all like experiments upon the lower classes of animals, as in many of them the hemorrhage from the larger vessel will be arrested spontaneously; this is true of the dog; in fact, so far as our knowledge extends, the sheep is more readily bled to death than most any other of the quadrupeds. Furthermore, the blood of animals is more plastic, coagulating with far greater rapidity than that of man; and as the arresting of the hemorrhage in these experiments is dependent upon the formation of a clot around the opening and in the cavity of the vessel, it ought therefore to happen more readily in them than in man.

"4th. If the hemostatic virtues of the agents already alluded to, are to be correctly ascertained, it is only *by experiments upon the human subject*, and no value should be given to those made in any other way. Whether the Brocchieri water, ergotine and creosote will stand this test, we are not as yet prepared to say, although several experiments made with them have come to our notice, but they are of so contradictory a character, that no definite conclusion can be formed. These substances no doubt hasten the coagulation of blood, and may, under some circumstances, arrest hemorrhage coming from the smaller arteries; but in the case of the larger vessels, they are of no manner of use, at least not more so than the lint without them.

"The experiments on the human subject that have come to our notice are,—wound on the hand, oozing, some time after the operation of hydrocele; oozing from a tumour on the back;—tried with Brocchieri water. In the first case, there appeared to be no effect; in the last two, some slight effect; the oozing in the case of the hydrocele, although diminished, could not be arrested. In a case of hemorrhoids that was operated upon, application of the ergotine was made with apparently good effect. In two cases of operation for hydrocele, the emulsion of creosote was used; in one of them, the bleeding from the small vessels was arrested; in the other no effect. So it is clear, that as yet, there is no danger of ligatures being supplanted by either of the above agents."

Excision of the Elbow-Joint in a case of Caries of the Articular Extremities of the Bones. An interesting case of this is recorded by Dr. Gurdon Buck, Jr., in the *New York Journ. of Med.*, for July last. The subject of it was a steamboat fireman, 25 years of age, of temperate habits and good constitution, admitted into the New York Hospital, June 6th, 1844, with inflammation of the right elbow-joint of nearly two years' duration, which originated without injury or known cause. It commenced with a swelling between the olecranon and the outer condyle, attended with stiffness and slight pain. On the swelling being punctured, a glairy fluid with lumps of solid substance was discharged. With occasional interruptions, the patient has been able to use the limb, though the joint has continued stiff, and its motions have been impaired. Medical treatment has been employed for a year past, such as blisters and cupping, of which numerous marks are visible about the joint. Till recently, patient has suffered but little pain, and his general health has continued good.

On the 1st of July, when he came under Dr. Bilou, the condition of the limb was as follows:—A uniform swelling involves the elbow, tapering off to the middle of the forearm below, and of the arm above, where the limb becomes small and wasted. The prominences of the olecranon and condyles, as well as the anterior fold of the joint, are obliterated. The swelling is formed by thickening and induration of the soft parts, the integument covering which, particularly over the posterior part, has lost much of its suppleness and mobility. Pressure over the olecranon and condyles causes pain. Synovial fluid is discharged from two openings, one of which is situated at the outer edge of the ulna, three fingers' breadth below the olecranon, the other at an inch above the inner condyle; the former leads to rough bone at the head of the radius, the latter, though it extends more than an inch inwards, does not communicate with exposed bone. The habitual position of the limb is that of incomplete extension. A slight degree of flexion from this position is admissible, as well as partial pronation and supination, all of which are attended with pain. No sensation of roughness is perceptible in performing these motions.

The surface of the swelling is pale, the temperature above that of the rest of the limb. Two issues have been established near the outer condyle since his admission, and an attempt made to preserve the limb flexed at a right angle, it being the most favourable position in which to allow anchylosis to take place. This, however, had to be abandoued in consequence of the increased pain and inflammation that followed.

Patient's general health is good, pulse sixty-two, tongue somewhat furred, bowels good.

July 25.—Preparatory to the operation to be performed this day, the issues have been allowed to heal up. The swelling about the joint has rather diminished.

The upper opening extends two inches downwards and outwards, and now communicates with denuded bone.

At a distance of two fingers' breadth above the condyles, the os brachii appears to be uneven and enlarged. The patient's general condition continues favourable; appetite good, and bowels regular.

Operation.—The tourniquet having been applied at the insertion of the deltoid muscle, and the patient placed in the recumbent posture, on his left side, with the head and shoulders elevated, and his back towards the operator, a longitudinal incision six inches in length, was made over the olecranon, extending to an equal distance above and below it, and penetrating to the bone. The triceps muscle and tendon thus split, were raised towards the outer condyle, care being taken to keep close to the bone and avoid dividing the connections of the tendon with the aponeurosis of the forearm. The same course was pursued in the dissection toward the inner condyle, the ulnar nerve being drawn inwards to prevent its being wounded. The integuments and subjacent aponeurosis were next raised on either side, below the olecranon, the olecranon itself denuded, and more than an inch of this process removed with the amputating saw. The edges of the wound being drawn forcibly to either side, the articular extremity of the os brachi was detached from its connections by dividing the lateral ligaments and the muscles arising from the condyles, which allowed it to be projected from the surrounding soft parts, while a transverse section was made above the condyles, separating a portion of an inch and a half in length. The head of the radius was now ascertained to be rough and denuded, as well as the smaller sigmoid cavity in which it rotates upon the side of the ulna. The division of the annular ligament allowed the head to be cleared from the soft parts sufficient to excise it at its neck. An additional portion of the ulna, including the coronoid process and lesser sigmoid cavity, remained still to be excised, which was effected by carefully dissecting up the insertions of the brachialis anticus muscle as far as was necessary, and then making a section from before backwards, with a metacarpal saw applied just below the coronoid process. The rough angular edges of bone were then pared away. Several ligatures were applied to small vessels, and the edges of the wound brought together with seven sutures, between which adhesive straps were applied, passing half round the limb.

The diseased parts presented the following appearances. A grayish, jelly-like substance covered the synovial surfaces, being most abundant where the synovial membrane passes from the bone and lines the ligaments.

This morbid product could be easily scraped off, and brought to view the spongy tissue of the bone, destitute of cartilage as well as compact outer shell. The spongy tissue thus exposed, was red and softened, and could easily be penetrated by the scalpel. Small patches of cartilage still remained at the margins of the articular surfaces, which were only loosely adherent to the subjacent spongy tissue, the exterior shell having been absorbed.

Between the outer condyle and the small head of the humerus, a deep ulcerated excavation, capable of containing a white bean, had been formed. The surface of the posterior fossa of the humerus, lodging the olecranon, was rough and bare. The articular surface of the ulna presented similar appearances to the os humeri, with two or three superficial excavations at the bottom of the greater sigmoid fossa.

The surface of the coronoid process and of the olecranon, as well as the inner margin of the sigmoid fossa, are studded with spiculæ of newly-formed bony matter.

The head of the radius was more completely deprived of cartilage and bony shell than the parts already noticed, and their place supplied by a thick layer of gelatinous deposit.

After the dressing of the wound, the limb was placed nearly at a right angle, on a flat splint padded with cotton, with a joint at the elbow allowing it to move edgewise. By means of this splint the arm was suspended from the ceiling after the patient was conveyed to his bed. This arrangement afforded great comfort; the limb swinging clear of his body, allowed him to vary his position within certain limits, an advantage he could not enjoy in any other way, compatible with perfect rest of the new joint. Sixty drops tinct. opii were then given.

At evening, about five hours after the operation, the patient began to suffer severe pain in the elbow, and the wound appeared distended with blood, which oozed from between the sutures. Thirty drops tinct. of opium, spirits mindereri ℥ss, were ordered to be repeated overy two hours.

July 26. Patient suffers less pain; swelling of the elbow has increased, with tension and slight lividity of the surface; oozing of blood continues; removed two sutures, and an intermediate strap from the middle of the wound, and readjusted the bandages that had become too tight; pulse ninety-seven. Ordered light poultice of flax-seed meal.

At 6 P. M. Oozing of blood has ceased; complains of pain in the left hypochondrium, extending to the right side; no evacuation for forty-eight hours. ℞.—Tinct. opii gtts. xxx; ol ricini ℥i.—At 10 P. M. to take his anodyne draught of tinct. opii gtts. xxx; aq. menth. pip. ℥ss.

27. Has passed a good night; general appearance is improved; free from pain in the abdomen; pain in the arm slight; serous fluid oozes from the wound; swelling is not increased; pulse ninety-four, soft; tongue coated with whitish fur; bowels still confined. ℞.—Infus. sennæ comp.

28. Passed a good night after taking the same anodyne as the night previous; has had two evacuations following a laxative enema; pulse seventy-four; removing the dressings, the elbow appeared well, tension has diminished, swelling the same; reapplied only two adhesive straps; continued poultice.

29. Doing well; suppuration is commencing; five ligatures came away; omitted adhesive straps; continued poultice; bowels confined; pulse seventy-two; ordered mistura eccoprotica.

30. Pulse sixty-eight; one evacuation from the bowels; tension of the elbow still further diminished, as well as redness of the surface; one ligature came away and removed one suture from each extremity of the wound.

31. Doing well, bowels confined, pulse seventy-four; removed two ligatures and the remaining sutures were removed; ordered pil. cathart., three.

Aug. 1. Tension and redness of the elbow have disappeared; the three remaining ligatures came away.

The farther progress of the case continued favourable, with the exception of a attack of erysipelas on the 17th Sept., which was, however, soon subdued. On or two collections of matter formed near the elbow, but after being opened, discharged and soon healed. The limb gradually acquired increased strength an facility of motion. The power of grasping bodies with the hand, which had bee very much impaired by the disease, was recovered in a good degree; pronatio and supination could be performed almost to the original extent; patient was able unassisted, to raise the hand to the head, and could handle a broom in sweeping carry half a pail of water, and perform other useful functions to his own gre satisfaction. He was also sensible of progressing improvement in his limb. Hi general health was good; the only symptom of which he complained was stricture across the chest. He was discharged this day, Feb. 1, 1845, to return t his family at Buffalo.

Dr. Buck remarks that the reason for preferring, in this case, the operation wit a single longitudinal incision, to an incision in the form of the letter H, or to th crucial incision, more generally recommended by authorities, was with a view t preserve undivided the lateral connections of the tendon of the triceps with th fascia investing the forearm, which must necessarily be sacrificed by either of th other modes of operating. The important advantage of so doing was, that a poi of action would be preserved for the triceps muscle, which might compensate i a good degree for the sacrifice of its connection with the olecranon. All the oth essential objects of the operation, such as the preservation of the ulnar nerve, &c were attained by this method, without any increased disturbance of the soft par or embarrassment in its several stages. The subsequent progress of the case cou scarcely have been more favourable under any circumstances, and from the exp rience derived from this case, together with one reported in No. VIII. of *Ne York Medical and Surgical Journal* for April, 1841, in which the H incision w employed, I should be disposed decidedly to give preference to the method adopt in the present instance. Rather more time, perhaps, is required for this operatio but the great advantage already noticed should certainly be considered more th an equivalent.

Statistics of the Medical Schools of the United States for the Session 1845–46.

	Students.	Graduates.
University of Pennsylvania - - -	462	168
Transylvania University - - -	171	58
Medical Institution of Geneva College -	179	39
Medical Department Willoughby University	164	30
Albany Medical College - - -	115	42
Louisville Medical Institute - - -	345	73
Western Reserve College, (Cleveland) -	161	52
Jefferson Medical College - - -	469	170
Rush Medical College, (Chicago) - -	50	9
Harvard University, Boston, - - -	180	31
College of Physicians and Surgeons, N. Y. -	219	38
Med. Dep. of University of the city of N. Y. -	425	131
Ohio Medical College - - -	192	46

University of Maryland	147	40
Medical College of Georgia	112	30
Med. Dep. of Hampden Sidney College	74	17
Med. Department University of Missouri	92	29
Med. Department Illinois College		13
St. Louis University	53	11
Med. Coll. of the State of South Carolina	210	74
University of the city of N. Y.	407	130
Indiana Medical College, (Laporte)	71	17
Berkshire Medical Institution	142	35
Medical College of Louisiana	103	19
Pennsylvania Medical College	70	38
Medical School of Maine	73	19
Vermont Medical College, (Woodstock)		24
Yale College	53	19
Castleton Medical College	140	36

Early Pregnancy.—Dr. J. B. Walker, of East Stoughton, Mass., relates in the *Boston Med. & Surg. Journ.*, Sept. 9, 1846, a case in which the menstrual function was established at the age of 11½ years, and the patient was delivered of a living child when only 12 years and 8 months of age.

Ectrotic treatment of Small-pox by Tincture of Iodine.—Dr. Samuel Jackson (late of Northumberland), was led in April, 1845, to make an experiment of aborting small-pox by the tincture of iodine, from contemplating its wonderful influence over erysipelas. He applied it to one arm of a child eleven months old, in confluent small-pox, on the third day of the eruption, and to the arm which appeared the worst, rubbing it freely on with a sponge, three times that day and twice the next. On the 11th day, when the pocks over the whole body were at their height, elevated with hard bases, those of the medicated arm were entirely flat, with thin, purulent matter under the dead cuticle, without any swelling of the part. There are, however, some very slight pits now to be seen, but they are very inconsiderable when compared with those on the other arm.

Drs. Goddard and Sargent have since tried the application.

Dr. Sargent used the iodine on one side of the face in twenty-five cases—"the swelling, soreness and tenderness were very much less than on the sides not covered; each pock remained flattened; but I cannot say that it prevented pitting."

Dr. Goddard writes that he tried the medicine in five cases—"not one of the patients shows the least pit or mark; none of them had been vaccinated, and the disease was confluent in most of them."

One advantage of this treatment, Dr. Jackson remarks, is, "that it removes the cuticle and leaves the part free from those disgusting discolorations which commonly remain for months."—*Med. Examiner*, Aug. 1846.

Medical Rank in the Navy.—The late Secretary of the Navy, Mr. Bancroft, just before retiring from office, issued the following General Order, which will be gladly received by the medical officers in the navy.

"GENERAL ORDER.

"Surgeons of the fleet, and surgeons of more than twelve years, [date of commission,] will rank with commanders.

"Surgeons of less than twelve years with lieutenants.

"Passed-assistant surgeons, next after lieutenants.

"Assistant surgeons, not passed, next after masters.

"Commanding and executive officers, of whatever grade, when on duty, will take precedence of all medical officers.

"This order confers no authority to exercise military command, and no additional right to quarters. GEORGE BANCROFT.

"*Navy Department*, August 31st, 1846."

According to this order, by reference to the Navy Register, we find the following named surgeons will now rank with commanders in the navy.

1 Jonathan Cowdry.
2 Wm. P. C. Barton.
3 Thomas Harris.
4 Wm. Turk.
5 John A. Kearney.
6 Bailey Washington.
7 Wm. Swift.
8 Thomas B. Salter.
9 Peter Christie.
10 Samuel Jackson.
11 Thomas Williamson.
12 Benajah Ticknor.
13 James Cornick.
14 Charles Chase.
15 David S. Edwards.
16 Isaac Hulse.
17 John S. Wily.
18 George Terrill.
19 Edmund L. Du Barry.
20 Waters Smith.
21 Benjamin F. Bache.
22 Thomas Dillard.
23 Stephen Rapalje.
24 James M. Greene.
25 Benjamin R. Tinslar.
26 George W. Codwise.
27 Gustavus R. B. Horner.
28 W. S. W. Ruschenberger.
29 William Johnson.
30 Samuel Mosely.
31 Robt. J. Dodd.
32 Wm. Fairlie Patton.
33 John F. Brooke.

The following named surgeons will now rank with lieutenants in the navy.

1 William Whelan.
2 Samuel Barrington.
3 Thomas L. Smith.
4 George Blacknall.
5 H. N. Glentworth.
6 Lewis B. Hunter.
7 John C. Spencer.
8 George Clymer.
9 Isaac Brinkerhoff.
10 Wm. Maxwell Wood.
11 John Vaughan Smith.
12 Jones W. Plummer.
13 George B. M'Knight.
14 Solomon Sharp.
15 Daniel Egbert.
16 Amos G. Gambrill.
17 W. A. W. Spotswood.
18 Jonathan M. Foltz.
19 Samuel C. Lawrason.
20 Edward Gilchrist.
21 John A. Lockwood.
22 Daniel C. M'Leod.
23 Lewis W. Minor.
24 Wm. J. Powell.
25 J. Frederick Sickels.
26 N. C. Barrabino.
27 Henry S. Reynolds.
28 M. G. Delaney.
29 Wm. F. M'Clenahan.
30 Wm. L. Van Horn.
31 Daniel S. Green.
32 James C. Palmer.
33 Ninian Pinkney.
34 Robt. T. Barry.
35 Charles A. Hassler.
36 David Harlan.

The youngest surgeon on this list of those who rank with lieutenants, has been nearly twelve years in the navy, and under the order must serve upwards o eleven years more, before he will rank as a commander.

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JEFFERSON MEDICAL COLLEGE,

OF PHILADELPHIA.

At a public commencement, held on the 24th of March, 1846, the Degree of Doctor of Medicine was conferred on the following gentlemen; after which a Valedictory Address was delivered by Professor Franklin Bache.

Name.	State.	Subject of Thesis.
Adams, Nelson A.	Pennsylvania,	Gunshot wounds.
Almand, John J.	Virginia,	Leucorrhœa.
Antrim, Joseph	Virginia,	Laryngeo-tracheitis.
Archer, William C.	Virginia,	Arsenic as a poison.
Ashcraft, William	Pennsylvania,	Inguinal Hernia.
Baker, Dorsey Syng	Illinois,	Trembles, or Milk Sickness.
Banks, William A.	Maine,	Hydrops.
Bartolette, Charles	New Jersey,	Inflammation.
Baskin, George W.	Pennsylvania,	Osseous Anchylosis.
Batte, John W.	Tennessee,	Inguinal Hernia.
Bigelow, George F.	Dist. of Columbia,	The young Physician.
Billon, Eugene,	France,	Sur la Thérapeutique de l'Apyrexie.
Boardman, Henry K. W.	Connecticut,	Pneumonia.
Bold, Charles M.	South Carolina,	Scarlatina.
Boyer, David P.	Pennsylvania,	Rheumatism.
Brinker, Thomas H.	Pennsylvania,	Scarlet Fever.
Brown, Edward W.	North Carolina,	Modus Operandi of Medicines.
Bulkley, Jonathan E.	Pennsylvania,	Ascites.
Bunn, Benjamin F.	Pennsylvania,	Tetanus.
Burwell, George W.	North Carolina,	Intermittent Fever.
Bythewood, Daniel H.	South Carolina,	Stricture of the Urethra.
Campbell, Clark C.	Alabama,	Pleuritis.
Campbell, John A.	Virginia,	Proteinaceous Compounds.
Chase, Dwight W.	New York,	Scarlet Fever.
Clements, Richard	Pennsylvania,	Refracting Media of the Eye.
Coffman, Samuel A.	Virginia,	Diagnosis of Pleurisy.
Cole, Algernon S.	Florida,	Enlargement of the Spleen.
Copeland, Adoniram Judson	Maine,	Claims of Missionaries on the Medical Profession.
Craddock, John W.	Virginia,	Extra-uterine Gestation.
Crowder, John V.	Virginia,	Cynanche Trachealis.
Custis, John T.	Virginia,	Acute Pleuritis.
Dickey, Benjamin,	Canada West,	Pathology and Treatment of Bronchitis.
Duffield, Edward	Maryland,	Dyspepsia.
Duncan, Wm. C.	Missouri,	Intermittent Fever.
Duncombe, Charles	Canada West,	Magnetism as a Therapeutic Agent.
Edge, John P.	Pennsylvania,	On the Blood Corpuscle.
Ellmaker, Thomas	Pennsylvania,	Proximate Cause of Intellectual Derangement.
Evans, Dickson	North Carolina,	Remittent Fever.
Everett, Azariah	Ohio,	Percussion of the Abdomen.
Ewing, William P.	Virginia,	Electrolysis of Water.
Fant, Francis M. E.	South Carolina,	Typhoid Fever.
Farmer, Henry H.	Virginia,	Blood-letting.
Fisher, Frederick B.	Virginia,	Pneumonia.
Fontaine, Madison R.	Virginia,	Remittent Fever.
Fox, Henry Haines	Pennsylvania,	Endocarditis.
Frantz, Benjamin	Pennsylvania,	Leucorrhœa.

Name.	State.	Subject of Thesis.
Gamble, Aaron	Pennsylvania,	Congestive Fever.
Garner, Presley K.	North Carolina,	Double Tertian Intermittent Fever.
Garrett, James R.	Virginia,	Cynanche Trachealis.
Gibson, Alexander	Virginia,	Inguinal Hernia.
Gill, Robert T.	New York,	Strychnia.
Gilliams, James S.	Pennsylvania,	Fevers.
Gorman, Charles R.	Pennsylvania,	On a form of Chorea vulgarly called Magrums.
Graves, S. Waterman	Massachusetts,	Therapeutic Electricity.
Gulley, William	Alabama,	Hydrops Cellulosus.
Hardy, George E.	Virginia,	Spinal Irritation.
Haynes, James A.	Virginia,	Scarlatina.
Hegins, Thomas G.	Pennsylvania,	The Practice and necessary Qualifications of a Country Practitioner.
Hendry, Bowman	New Jersey,	Galvanism as a Remedial Agent.
Holcombe, Hugh W.	Virginia,	Cold Water as a Therapeutic Agent.
Howland, David R.	Ohio,	Pneumonia.
Hoyt, John Jay	Pennsylvania,	Hepatitis.
Huey, James E.	Pennsylvania,	Puerperal Fever.
Humphreys, Joseph D.	Virginia,	Iritis.
James, J. Sexton	Pennsylvania,	Pertussis.
Jenkins, William H.	Alabama,	Scrofula.
Johnston, Joseph R.	North Carolina,	Typhoid Fever, as it appeared in Iredell Co., N. C., in the year 1843–44.
Jones, Edwin A.	Georgia,	Delirium Tremens.
Jones, John H.	Virginia,	Febris Puerperalis.
Kern, Josiah	Pennsylvania,	Gonorrhœa.
Laird, Alexander T.	Virginia,	Inflammation of the Uterus and its Appendages in Puerperal Women.
Lambeth, Lafayette, W.	Virginia,	Processes and Modes of Dying.
Lasell, Samuel M.	New York,	Scrofula.
Leaming, J. Furman	New Jersey,	Hæmatosis.
Leasure, Daniel	Pennsylvania,	Qualifications and Duties of a Country Practitioner.
Lenoir, Benjamin B.	Tennessee,	Chlorine.
Lewis, David William	Pennsylvania,	The Pulse.
Lewis, Francis West	Pennsylvania,	Treatment of Aneurism by Compression and Valsalva's Method.
Lewis, Magnus M.	Virginia,	Uterine Hemorrhage.
Lingo, Douglass	Pennsylvania,	Puerperal Fever.
Longenecker, John Henry	Pennsylvania,	Magnetism, Animal or Terrestrial, as a Remedial Agent.
Longshore, Ashbel B.	Pennsylvania,	Epidemic Bilious Pneumonia.
Marable, George B.	Virginia,	Physiology of the Blood.
Mauk, John B.	Pennsylvania,	Mechanical Treatment of Phthisis Pulmonalis.
Mauzy, Charles K.	Virginia,	Diphthérite.
Mayes, Thomas A.	South Carolina,	Intermittent Fever.
McClure, Samuel	Pennsylvania,	Rubeola.
McClurg, John R.	Pennsylvania,	Apoplexy.
McConaughy, Francis M.	Pennsylvania,	Epidemic Malignant Erysipelatous Fever.

Name.	State.	Subject of Thesis.
McKennie, Marcellus	Virginia,	Intestinal Pneumatosis.
Meares, John L.	North Carolina,	Use and Abuse of General Blood-letting.
Meière, William S.	Pennsylvania,	The Physician, his Character, Duties, and Eminent Services.
Miller, Andrew	Pennsylvania,	Anatomy and Physiology of the Reflex System of Nerves.
Milnor, Amor C.	Pennsylvania,	Eupatorium Perfoliatum.
Musser, Benjamin	Pennsylvania,	Coxalgia.
Negley, Eliab	Pennsylvania,	Cyesis.
Nelson, Robert B.	Virginia,	Blood-letting.
Nelson, Robert William	Virginia,	Intermittent Fever.
Nevin, William W.	Pennsylvania,	Conception.
Niblock, William G.	Pennsylvania,	Asthma.
Nichols, Thomas G.	Massachusetts,	Eczema.
Notson, William	Pennsylvania,	Cynanche Trachealis.
Noyes, James	Rhode Island,	Cynanche Trachealis.
Nute, William G.	Kentucky,	Irritation.
Ord, James Lycurgus	Michigan,	Entozoa.
Osborne, William E.	Virginia,	Delirium Tremens.
Osler, Owen	Pennsylvania,	Principles of Practical Medicine.
Otey, Paul H.	Tennessee,	Scrofulosis.
Palm, Philip R.	Pennsylvania,	Dysenteria.
Patterson, James V.	Pennsylvania,	Aneurism.
Paul, John H.	New Hampshire,	Scarlatina.
Pearis, Robert A.	Virginia,	Causes of Scrofula.
Perkins, Thomas H.	Virginia,	Typhoid Fever.
Phillips, Dinwiddie B.	Virginia,	Polypus of the Heart.
Postlethwaite, Samuel	Pennsylvania,	Menstruation.
Read, Albert N. (M. D.)	Ohio,	Coxalgia or Hip Disease.
Reed, Thomas Sydenham,	New Jersey,	Dysentery as it occurred at Allowaystown, N. J., in 1832.
Rhees, Morgan J.	Pennsylvania,	On the Liability of Vegetables and Cold-Blooded Animals to Inflammation.
Richards, Buchan	Virginia,	Cinchona.
Rile, John H.	Pennsylvania,	Object of a Thesis.
Robards, James	Tennessee,	Scarlatina.
Robertson, John H.	Maryland,	Typhus Fever.
Rogers, Moses	Massachusetts,	Reproduction of Animals.
Rust, George W.	Virginia,	Influenza.
Scales, James T.	Tennessee,	Syphilis.
Schmeltzer, George, Jr.	Pennsylvania,	Epidemic Erysipelas.
Seebold, John P.	Pennsylvania,	Typhoid Fever.
Sergeant, Spencer	Pennsylvania,	Vaccination.
Seymour, William J.	Virginia,	Cutaneous Absorption.
Shackelford, Edmund D.	Missouri,	Congestive Fever of the West.
Shallenberger, Aaron T.	Pennsylvania,	Black Tongue.
Shands, Aurelius R.	Virginia,	Hernia.
Shelley, Benneville Y.	Pennsylvania,	Human Reproduction.
Shindel, Isaac N.	Pennsylvania,	Inguinal Hernia.
Shunk, Francis R.	Pennsylvania,	Variola.
Sides, Benjamin F.	Pennsylvania,	Pneumonia.
Sidwell, Reuben	Pennsylvania,	Chorea.
Sifre, Santiago	West Indies,	Sobre los diferentes modos do morir.
Simpson, James F.	North Carolina,	Causes of Dyspepsia.
Sloanaker, Lewis M.	Pennsylvania,	Apocynum Cannabinum.

Name.	State.	Subject of Thesis.
Smith, Edward M.	Pennsylvania,	Valvular Diseases of the Heart.
Spencer, H. Gordon P.	New York,	Erysipelatous Scarlatina.
Spindle, Thomas G.	Kentucky,	Gonorrhœa.
Steiner, Josephus M.	Maryland,	Apoplexy.
Stephenson, James William	Virginia,	Rheumatism.
Stuart, James	Virginia,	Dyspepsia.
Thomas, John C.	Maryland,	Emetism.
Thornberry, Philip	Kentucky,	Urethral Stricture.
Treadwell, Robert O.	Pennsylvania,	Opinions of the Ancients and Moderns with regard to the Uses of the Arteries, Veins, and Capillaries.
Vastine, John S.	Pennsylvania,	Puerperal Convulsions.
Wallace, John W.	Pennsylvania,	Physiology of Menstruation.
Webb, Henry Young	Alabama,	Pneumonia.
Webb, Samuel	Tennessee,	Inflammation, and the Modes of subduing it.
Wetherill, William	Pennsylvania,	Hæmoptysis.
Whaley, James E.	South Carolina,	Pneumonia.
White, T. Wistar	Virginia,	Inflammation.
Whitley, James	New York,	The Reciprocal Influence of the Heart and Lungs in Disease.
Whitney, Marshall G.	Pennsylvania,	Pulmonum Tuberculosis.
Wild, Edward Augustus	Massachusetts,	Lyssa.
Williams, Hampden Sidney	North Carolina,	Pertussis.
Williamson, Duncan	Pennsylvania,	Cannabis Indica.
Wilson, James Potter	Pennsylvania,	Puerperal Epidemic of Centre Co. in 1843-4-5.
Wilson, John	Pennsylvania,	Anasarca.
Wilson, Miles A.	Virginia,	Congestive Fever.
Winfield, Benjamin F.	Virginia,	Intermittent Fever.
Winfield, John Q.	Virginia,	Scarlatina.

The Honorary Degree of Doctor of Medicine was conferred on the following gentlemen:—

John McFarland, of Pennsylvania,
Walter Hughson, of New York,
George Van Buskirk, of Pennsylvania,
George Leinaweaver, of Pennsylvania.

Of the Graduates, there were from—

Pennsylvania,	66	Missouri,	2
Virginia,	41	Canada West,	2
North Carolina,	8	Illinois,	1
South Carolina,	5	District of Columbia,	1
Maryland,	4	Rhode Island	1
Tennessee,	6	Connecticut,	1
New York,	6	Florida,	1
New Jersey,	4	Georgia,	1
Alabama,	4	Michigan,	1
Massachusets,	4	New Hampshire,	1
Ohio,	3	West Indies,	1
Kentucky,	3	France,	1
Maine,	2		

Total number of Graduates, 170

Number of the Class during the Session of 1845-6,—469.

Robert M. Huston, M.D.
Dean of the Faculty.

Jefferson Medical College, March 24th, 1846.

UNIVERSITY OF PENNSYLVANIA.—MEDICAL DEPARTMENT.

SESSION OF 1846-47.

The Medical Lectures will commence on Monday, November the 2d, and be continued, under the following arrangement, to the middle of March ensuing:

Practice and Theory of Medicine,	By Nathaniel Chapman, M. D.
Chemistry,	" Robert Hare, M. D.
Surgery,	" William Gibson, M. D.
Anatomy,	" William E. Horner, M. D.
Institutes of Medicine,	" Samuel Jackson, M. D.
Materia Medica and Pharmacy,	" George B. Wood, M. D.
Obstetrics and the Diseases of Women and Children,	" Hugh L. Hodge, M. D.

Clinical Instruction at the Pennsylvania Hospital.

The rooms for Practical Anatomy will be open from October 1st, to the end of March ensuing. John Neill, M. D., Demonstrator.

Extensive cabinets of Anatomy, Materia Medica, Chemistry, Surgery, and Obstetrics, exist, and are in a course of annual improvement.

The Professor of Materia Medica, besides his cabinet, has a large and well-furnished Conservatory, from which are exhibited, in the fresh and growing state, the native and exotic Medicinal Plants.

W. E. HORNER, M. D., *Dean of the Medical Faculty,*
263 *Chestnut Street Philada., June 1st,* 1846.

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1846—7.

The regular Course of Lectures will commence on Monday, the second day of November, and end on the last day of February.

Robley Dunglison, M. D., Professor of Institutes of Medicine.
Robert M. Huston, M. D., Professor of Materia Medica and General Therapeutics.
Joseph Pancoast, M. D., Professor of General, Descriptive and Surgical Anatomy.
John K. Mitchell, M. D., Professor of Practice of Medicine.
Thomas D. Mutter, M. D., Professor of Institutes and Practice of Surgery.
Charles D. Meigs, M. D., Professor of Obstetrics and Diseases of Women and Children.
Franklin Bache, M. D., Professor of Chemistry.
Ellerslie Wallace, M. D., Demonstrator of Anatomy.

Every Wednesday and Saturday during the Course, Medical and Surgical cases are investigated and prescribed for before the class. During the past year not fewer than 1,000 cases were treated, and upwards of 172 were operated on. The Clinical Lectures are so arranged as to permit the student, should he desire it, to attend the Medical and Surgical practice and Lectures at the Pennsylvania Hospital.

On and after the first of October, the Dissecting Rooms of the College will be open under the direction of the Professor of Anatomy and the Demonstrator.

Owing to the large size of the class, which numbered 469 during the last session, it became expedient to make extensive and important alterations in the College edifice. These will be completed by the first of September.

R. M. HUSTON, M. D., *Dean of the Faculty,*
No. 1 *Girard Street.*

PENNSYLVANIA COLLEGE—MEDICAL DEPARTMENT.

SESSION OF 1846—7.

The Faculty is composed as follows:—

William Darrach, M. D., Professor of the Theory and Practice of Medicine.
John Wiltbank, M. D., Professor of Obstetrics and Diseases of Women and Children.
Henry S. Patterson, M. D., Professor of Materia Medica and Pharmacy.
William R. Grant, M. D., Professor of Anatomy and Physiology.
David Gilbert, M. D., Professor of the Principles and Practice of Surgery.
Washington L. Atlee, M. D., Professor of Medical Chemistry.

The Lectures will commence on Monday, Nov. 2d, and be continued until the ensuing first of March. The commencement for conferring degrees will be held as early after the close of the session as practicable.

Regular public examinations on all the branches are held by the respective Professors.

The Faculty, not deeming it advisable to establish a College Clinic, will furnish a ticket to the Clinical Lectures at the Pennsylvania Hospital, Pine street, to each pupil in attendance upon a second Course of Lectures.

The Anatomical Rooms will be opened on the first of October, under the personal superintendence of Prof. Grant.

Three years study in the office of a respectable practitioner, and an attendance upon two full Courses of Lectures, one of which must be in this Institution, together with an attendance upon one Course of Clinical Instruction in some approved Hospital, are the requisites which entitle the pupil to become a candidate for graduation.

WM. DARRACH, *President of the Faculty.*
H. S. PATTERSON, *Registrar.*

MEDICAL COLLEGE OF GEORGIA.

The next course of Lectures will commence on the second Monday (the 9th) of November, and be continued until March following.

FACULTY.

George M. Newton, M. D., Professor of Anatomy.
L. A. Dugas, M. D., Professor of Physiology and Pathological Anatomy.
Alexander Means, M. D., Professor of Chemistry and Pharmacy.
I. P. Garvin, M. D., Professor of Therapeutics and Materia Medica.
Paul F. Eve, M. D., Professor of the Principles and Practice of Surgery.
L. D. Ford, M. D., Professor of the Institutes and Practice of Medicine.
Joseph A. Eve, M. D., Professor of Obstetrics and Diseases of Women and Infants.
H. F. Campbell, M. D., Demonstrator of Anatomy.

Clinical Instruction will be given, as usual, in the City Hospital.

Board may be obtained at from $12 to $15 per month, every thing included.

The fee for the entire course is $115; Matriculation (taken once) $5; Demonstration ticket, optional, $10.

G. M. NEWTON, M. D., *Dean.*

Augusta, Geo., August, 1846.

WASHINGTON UNIVERSITY OF BALTIMORE.

FACULTY OF THE MEDICAL DEPARTMENT.

J. C. S. Monkur, M. D., Professor of Theory and Practice of Medicine.
E. Foreman, M. D., Professor of Chemistry.
Chas. B. Gibson, M. D., Professor of Surgery.
W. T. Wilson, M. D., Professor of Therapeutics and Materia Medica.
W. T. Leonard, M. D., Professor of Anatomy.
Wm. H. Stokes, M. D., Professor of Obstetrics and Medical Jurisprudence.
Dr. Wakeman Bryarly, Demonstrator of Anatomy.

The annual course of Lectures will commence on the last Monday in October next, and continue four months.

Fees for a full course of Lectures $90; Matriculation fee $5; Diploma fee $20; Demonstrator's fee (optional) $10.

Students of Medicine can be received as boarders in apartments attached to the Hospital.

Address all communications to E. FOREMAN, *Dean.*

FRANKLIN MEDICAL COLLEGE OF PHILADELPHIA.

The Annual Course of Lectures in this Institution, will be opened on Monday, 12th October, (the second Monday in October,) and will be continued till the end of the ensuing February.

The Faculty is composed as follows:—

Paul Beck Goddard, M. D., *Anatomy and Histology.*
C. C. Van Wyck, M. D., *Principles and Practice of Surgery.*
Meredith Clymer, M. D., *Principles and Practice of Medicine.*
John Barclay Biddle, M. D., *Materia Medica and Therapeutics.*
David Hunter Tucker, M. D., *Obstetrics and Diseases of Women and Children.*
Levin S. Joynes, M. D., *Physiology and Legal Medicine.*
James B. Rogers, M. D., *General and Organic Chemistry.*
Joseph Leidy, M. D., *Demonstrator of Anatomy.*

The Franklin Medical College is incorporated by the Legislature of Pennsylvania, with general privileges equal to those enjoyed by any similar institution, and is authorized "to grant the degree of Doctor of Medicine to any such persons as shall possess the qualifications usually required of candidates in other Medical Colleges in this state."

The Faculty of the Franklin College will aim to render their course of instruction practical and demonstrative. Their students will have an equal participation in all the advantages that have made Philadelphia the Medical Metropolis of the Union. In freedom of access to hospitals, libraries, museums, &c., they will stand on a footing with those of other institutions, and the Faculty pledge themselves to secure an abundant and cheap supply of material for the rooms of the Demonstrator of Anatomy. The students will be admitted gratuitously to the Medical and Surgical Clinical Lectures delivered in the General Dispensary attached to the College.

Fee for each of the seven Courses of Lectures, $15. Matriculation fee, to be paid only once, $5; Diploma fee, $10. Additional information respecting the course of instruction can be obtained upon application to J. B. BIDDLE, M. D., Dean of the Faculty,
N. E. corner of Spruce and Quince streets, Philadelphia.

UNIVERSITY OF THE STATE OF NEW YORK.

COLLEGE OF PHYSICIANS AND SURGEONS.—FORTIETH SESSION.

The annual course of lectures in the College will be commenced on Monday, 2d of November, 1846, and continued until the 1st of March, 1847.

Alexander H. Stevens, M. D., President of the College and Emeritus Professor of Clinical Surgery.

Joseph Mather Smith, M. D., Professor of the Theory and Practice of Medicine and Clinical Medicine.

John B. Beck, M. D., Professor of Materia Medica and Medical Jurisprudence.

John Torrey, M. D., LL.D., Professor of Chemistry and Botany.

Robert Watts, Jr., M. D., Professor of Anatomy and Physiology.

Willard Parker, M.D., Professor of the Principles and Practice of Surgery and Surgical Anatomy.

Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Gustavus A. Sabine, M. D., Demonstrator of Anatomy.

Fees.—Matriculation fee $5; fees for the full course of Lectures $94; Demonstrator's ticket $5; Graduation fee $25. Board, average, $3 per week. Clinical instruction is given at the New York Hospital daily by the Medical Officers (Professor Smith being one of them), fee $8 per annum; at the Eye Infirmary, without fee; and about 1000 cases are annually exhibited to the class in the College Clinique. Obstetrical cases and Anatomical *Materiel* are abundantly furnished through the respective departments. The annual commencement is held on the second Thursday in March; there is also a semi-annual examination in September. The requisites for graduation are, 21 years of age, three years of study, including two full courses of lectures, the *last* of which must have been attended in this College, and the presentation of a Thesis, on some subject connected with Medical Science.

During the month of October a course of Lectures will be delivered on the following subjects:—

Hygiene, - - - - -	by Professor Smith.
Comparative Anatomy, - - -	by Professor Watts.
Venereal Diseases, - - -	by Professor Parker.
Diseases of the Os and Cervix Uteri -	by Professor Gilman.

This course will be *free* to the *Matriculated* students of the College.

R. WATTS, Jr., M. D., *Secretary to the Faculty.*

College of Physicians and Surgeons, No. 67 Crosby Street, New York.

UNIVERSITY OF MARYLAND.

FACULTY OF PHYSIC—SESSION OF 1846-7.

The Lectures will commence on Monday, October 26th, and continue until the 1st of March following.

Richard Wilmot Hall, M.D., Obstetrics and Medical Jurisprudence.
Wm. E. A. Aikin, M.D., LL.D., Chemistry and Pharmacy.
Nathan R. Smith, M.D., Surgery.
Samuel Chew, M.D., Therapeutics, Materia Medica, and Hygiene.
Joseph Roby, M.D., Anatomy and Physiology.
Wm. Power, M.D., Theory and Practice of Medicine.
Geo. W. Miltenberger, M.D., Demonstrator of Anatomy.

Instruction in Clinical Medicine and Clinical Surgery every day at the Baltimore Infirmary opposite the Medical College. The rooms for Practical Anatomy will be opened Oct. 1st, under the charge of the Demonstrator.

Fees for the entire course, $90; Matriculation, $5; Graduation fee, $20; Clinical ticket free; Dissecting ticket optional with the student. Comfortable board may be obtained in the vicinity of the Medical College for $2 50 to $3 50 per week.

WM. E. A. AIKEN, *Dean*, &c. &c.

MEDICAL INSTITUTION OF GENEVA COLLEGE.

The annual course of Lectures in this Institution will commence on the first Tuesday of October, and continue sixteen weeks.

Thomas Spencer, M.D., Professor of the Institutes and Practice of Medicine.
Charles B. Coventry, M.D., Professor of Obstetrics and Medical Jurisprudence.
James Webster, M.D., Professor of Anatomy and Physiology.
James Hadley, M.D., Professor of Chemistry and Pharmacy.
Frank H. Hamilton, M.D., Professor of the Principles and Practice of Surgery.
Charles A. Lee, M.D., Professor of Materia Medica and General Pathology.
Corydon La Ford, M.D., Demonstrator of Anatomy and Librarian.

The fee for a full course of Lectures is $62, which may be paid to the Registrar at the commencement of the term, or the fee for each course may be paid on taking out the ticket.

Arrangements have been made for an ample supply of material for the anatomical department, and every facility will be furnished for pursuing Practical Anatomy.

C. B. COVENTRY, *Registrar.*

MASSACHUSETTS MEDICAL COLLEGE, BOSTON.

The Medical Lectures of Harvard University begin annually at the Medical College in Boston, on the first Wednesday in November, and continue four months.

The great increase of the class has rendered necessary the erection of a new and splendid Medical College in Grove street, near the Hospital, which will be ready for occupation by the first of November.

The Massachusetts General Hospital has also been enlarged during the past year to more than twice its former dimensions, and will contain double its former number of patients.

Anatomy and Surgery by Dr. Warren.
Midwifery and Medical Jurisprudence by Dr. Channing.
Materia Medica and Clinical Medicine by Dr. Bigelow.
Principles of Surgery and Clinical Surgery by Dr. Hayward.
Chemistry by Dr. Webster.
Theory and Practice of Medicine by Dr. Ware.

Matriculation fee, $3. Ticket for dissecting room, $5. Hospital and Library gratuitously to those who attend the lectures.

WALTER CHANNING,
Dean of the Faculty.

July, 1846.

THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

COLLABORATORS.

Elisha Bartlett, M. D. *Professor of the Institutes and Practice of Medicine in the University of Maryland.*

T. Romeyn Beck, M. D. *Professor of Materia Medica in the Albany Medical College.*

John B. Beck, M. D. *Prof. of Mat. Med. in the Coll. of Phys. & Surg., N. York.*

Jacob Bigelow, M. D. *Professor of Materia Medica in Harvard University, Boston.*

A. Brigham, M. D. *Superintendent and Physician to the New York State Insane Hospital at Utica.*

Jos. Carson, M. D. *Professor of Materia Medica in the Philadelphia College of Pharmacy.*

N. Chapman, M. D. *Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.*

B. H. Coates, M. D. *of Philadelphia.*

D. Francis Condie, M. D. *of Philadelphia.*

S. Henry Dickson, M. D. *Professor of the Institutes and Practice of Medicine in the Medical College of the State of South Carolina.*

Pliny Earle, M. D. *Physician to the Bloomingdale Asylum for the Insane.*

Charles Evans, M. D. *Attending Physician to the Friends' Asylum, Frankford.*

John D. Fisher, M. D. *one of the Physicians to the Massachusetts General Hospital.*

E. Geddings, M. D. *Professor of Surgery in the Medical College of the State of South Carolina.*

W. W. Gerhard, M. D. *one of the Physicians to the Pennsylvania Hospital.*

William Gibson, M. D. *Professor of Surgery in the University of Pennsylvania.*

R. E. Griffith, M. D. *late Professor of Medicine in the University of Virginia.*

George Hayward, M.D. *Professor of the Principles of Surgery and Clinical Surgery in Harvard University, Boston.*

Hugh L. Hodge, M. D. *Prof. of Midwifery in the University of Penn.*

E. Hale, M. D. *Physician to the Massachusetts General Hospital.*

Thomas Harris, M. D. *Surgeon U. S. Navy.*

Charles R. King, M. D. *of Philada.*

T. S. Kirkbride, M. D. *Physician to the Pennsylvania Hospital for the Insane.*

Samuel Jackson, M. D. *Professor of the Institutes of Medicine in the University of Pennsylvania.*

Samuel Jackson, M. D. *Philadelphia.*

William E. Horner, M. D. *Professor of Anatomy in the University of Pennsylvania.*

Valentine Mott, M. D. *Professor of Surgery in the University of New York.*

James McNaughton, M. D. *Professor of the Theory and Practice of Medicine in Albany Medical College.*

Reuben D. Mussey, M. D. *Professor of Surgery in the Medical College of Ohio.*

T. D. Mutter, M. D. *Professor of Surgery in Jefferson Medical College.*

G. W. Norris, M. D. *one of the Surgeons to the Pennsylvania Hospital.*

C. W. Pennock, M. D. *one of the Physicians to the Philadelphia Hospital, Blockley.*

Wm. Pepper, M. D. *one of the Physicians of the Pennsylvania Hospital.*

Nathan R. Smith, M. D. *Professor of Surgery in the University of Md.*

Thomas Stewardson, M. D. *of Phila.*

Alfred Stille, M. D. *of Philadelphia.*

John A. Swett, M. D. *of New York.*

A. F. Vache, M. D. *of New York.*

John Ware, M. D. *Professor of the Theory and Practice of Physic in Harvard University, Boston.*

John C. Warren, M. D. *Professor of Anatomy and Surgery in Harvard University, Boston.*

Edward Warren, M. D. *of Boston.*

John Watson, M. D. *one of the Surgeons of the New York Hospital.*

G. B. Wood, M. D. *Professor of Materia Medica and Pharmacy in the University of Pennsylvania.*

Gouverneur Emerson, M. D. *of Philadelphia.*

EDITOR—Isaac Hays, M. D., *one of the Surgeons to Wills Hospital for the Blind and Lame, &c.*

TO READERS AND CORRESPONDENTS.

The following works have been received:—

Essays, Anatomical, Zoological, Surgical, and Miscellanous, Reprinted from the Philosophical Transactions; Transactions of the Medico-Chirurgical Society of London, Dublin Philosophical Journal, Dublin Hospital Reports, Report of the British Association, and the Dublin Medical Press. By Arthur Jacob, M. D., F. R. C., S. J. Prof. Anat. and Phys., &c. Dublin, 1845. (From the Author.)

Scrofula; its Nature, its Causes, its Prevalence, and the Principles of Treatment. By Benjamin Phillips, F. R. S. Assistant Surgeon to the Westminster Hospital. Illustrated with an engraved plate. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

Animal Chemistry, with reference to the Physiology and Pathology of Man. By Dr. J. Franz Simon, F. Soc. for the advancement of Physiological Chemistry. Translated and Edited by George E. Day, M. A., and L. M., Cantab. Licentiate of the Royal College of Physicians. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

The United States Dissector, or Lessons in Practical Anatomy. By Wm. E. Horner, M. D., Prof Anat. in the University of Pennsylvania. Fourth Edition, with numerous Illustrations. Edited by Henry H. Smith, M. D. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

A Treatise on the Diseases of the Heart and Great Vessels, and on the Affections which may be mistaken for them: comprising the Author's view of the Physiology of the Heart's Action and Sounds as demonstrated by his experiments on the motions and sounds in 1830, and on the sounds in 1834–5. By J. Hope, M. D., F. R. S., &c. Second American, from the third London Edition. With Plates. With notes and a detail of recent experiments. By C. W. Pennock, M. D., &c. &c. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

A summary of the Transactions of the College of Physicians of Philadelphia. From April, 1846, to Aug. 1846, inclusive. (From the College.)

An Essay on Congestive Remittent Fever; "the Diseases of the South;" containing an explanation of its phenomena and the modus operandi of the Therapeutic Agents employed by the application of electrical laws. By O. F. Manson, M. D. Richmond, 1846. (From the Author.)

French Cookery. The Modern Cook, a practical guide to the Culinary art in all its branches, adapted as well for the largest establishments as for the use of private families. By Charles Elme Francatelli, Pupil of the Celebrated Carême, and late Maître d'hotel, and chief cook to her majesty the Queen. With numerous illustrations. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

Human Physiology. With 368 illustrations. By Robley Dunglison, M. D., &c. &c. Sixth Edition, greatly improved. In two volumes. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

The Medical Formulary: being a collection of Prescriptions derived from the writings and practice of many of the most eminent physicians in America and Europe. To which is added an Appendix containing the usual dietetic preparations and antidotes for poisons. The whole accompanied with a few pharmaceutic and medical observations. By Benjamin Ellis, M. D. Eighth Edition, with numerous additions, by S. G. Morton, M. D. Philadelphia, Lea & Blanchard, 1846. (From the Publishers.)

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